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Northeastern Illinois 1995 Airport System IMPLEMENTATION STUDY / PRIORITY STATEMENT

a staff technical report



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Northeastern Illinois 1995 Airport System IMPLEMENTATION STUDY / PRIORITY STATEMENT

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June 1976

CHICAGO AREA TRANSPORTATION STUDY 300 WEST ADAMS STREET CHICAGO, ILLINOIS 60606

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PREFACE

In addition to making a recommendation for regional airport development priorities, this report documents a process for assigning priorities for regional airport development. This is the first effort of its kind in the northeastern Illinois area. As a basis for analysis, it uses the 1995 Airport System Plan adopted as part of the 1995 Transportation System Plan in 1974.

It should also be mentioned that the data used in this study may appear to be out of date in some cases. The reason is that the new data base developed in the FAA-funded Year 2000 Airport System Plan was not available when this report was written. Therefore, the more limited data base used in the development of the 1995 Airport System Plan (with a few improvements) was also used in this report.

The fact that the report presents a prioritized list of airport development and a method to arrive at such a list is even more important. It would be very timely to receive comments on this report, both in terms of the method and the results. These comments will be used in the coming year 1977 to aid in formulating the approach to be taken in assigning priorities within an adopted Year 2000 Airport System Plan.

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PART I. INTRODUCTION

REPORT PURPOSE

At first glance, Figure I-1 appears to depict a rather inflexible, concise recommendation for the development of specific types of airport facilities in specific locations. These recommendations are, however, less precise than such a map tends to imply. There are too many special factors that must be taken into consideration in this or any long range transportation system plan to depend entirely on a map to convey its full meaning. It is the purpose of this report to serve as a guide to the interpretation of the 1995 Airport System Plan recommendations and to propose means by which they may be implemented within northeastern Illinois.

EVOLUTION OF THE 1995 AIRPORT SYSTEM PLAN

In September, 1973, a recommended 1995 airport system plan for the eight county Chicago-Northwest Indiana Standard Consolidated Area was presented in a report by the CATS.¹ The recommended plan was the end result of an evaluation process which examined four alternative systems and their interrelationship with alternative highway, transit, and freight transportation plans. In the time since this recommended airport system was proposed, it has been presented to and reviewed by various governmental and aviation industry groups including personnel from the Great Lakes Region of the Federal Aviation Administration (FAA), the Illinois Division of Aeronautics, the CATS Council of Mayors, and airport managers. Based on comments by these and other groups and on field inspections of the many existing facilities, some minor modifications have been made to this recommended plan. In its present form, as depicted on Figure II-1, the plan consists of a total of two Military Airports and 36 Public-Use airport sites. Of the latter, 30 exist today as public-use facilities (See Figure I-2). Two, Chicago-O'Hare International and Chicago-Midway, are proposed to continue as the Air Carrier Airports for the region. Chicago-Midway and, to some degree, Chicago-O'Hare International will also serve corporate and business aviation. Nine sites, including two new facilities are proposed to be developed as publicly owned Instrument Landing System (ILS) equipped airports.

These Public ILS airports are to have a 5,400-foot long primary hard surface runway in addition to other characteristics listed in Appendix, page 113. Fourteen airport sites are proposed to be Publicly Owned Visual Flight Rule (VFR) airports. Nine of these are currently privately owned facilities, four are proposed new sites and one is now public owned. It should be noted, however, that the one publicly-owned site, Joliet Municipal, is to be replaced by one of the new facilities. The end result will be 13 airports of this category. The remaining 11 Public-Use airport sites represented on the plan are now privately owned. Ten are proposed to remain so and the eleventh, Elgin Airport, is to be eventually replaced by a new Public ILS facility. The degree of development and continued existence of these airports is up to private enterprise.



NOTE: Northwestern Indiana is Not Included in this Report

- AIR CARRIER
- PUBLICLY-OWNED, INSTRUMENT LANDING SYSTEM
- PUBLICLY-OWNED, VISUAL FLIGHT RULES
- ▲ PRIVATELY-OWNED, PUBLIC-USE
- ☆ MILITARY AIRPORT
- 1995 FREEWAY SYSTEM

Figure I-1 AIRPORT SYSTEM 1995 PLAN

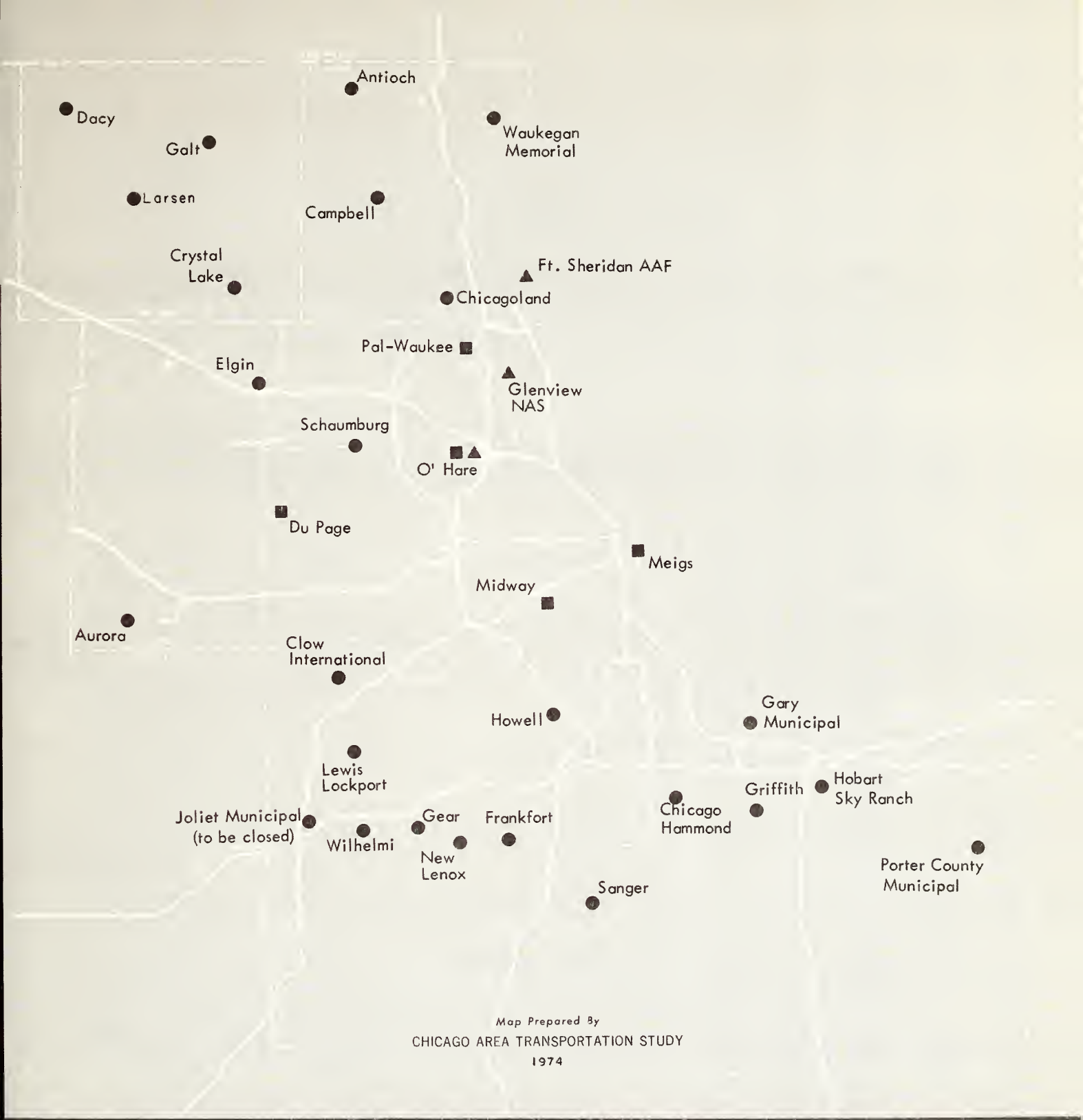


Figure I-2 THE CHICAGO-GARY STANDARD CONSOLIDATED AREA EXISTING AIRPORTS 1974

ADOPTION OF THE PLAN

One of the most important uses for the plan will be as part of the "A-95 Review Process". This process, established by procedures set forth by the U.S. Office of Management and Budget, calls for the announcement of proposed projects (including airport-related projects) for which federal aid is sought and then requires that a determination be made as to the consistency of these individual projects with regional plans and development programs.² Thus, the 1995 Plan not only is to serve as a guide for investment in the region's transportation system, it also provides the basis for A-95 project reviews in the transportation area.

However, before a plan can be used in any of these ways, it must first be adopted by the affected regional agencies. The 1995 Airport System Plan, part of the 1995 Transportation System Plan for the Northeastern Illinois = Northwestern Indiana Region, was adopted by the CATS' Policy Committee on June 21, 1974.

After a two-part public hearing, the Northeastern Illinois Planning Commission (NIPC) adopted the 1995 Transportation System Plan on November 21, 1974. The aviation and freight portions of the plan were labeled "preliminary". However, NIPC acknowledged the need to retain certain existing general aviation airports included in the plan and has already used the 1995 Airport System Plan as the basis for A-95 reviews.

The Northwestern Indiana Regional Planning Commission (NIRPC) in action taken on November 27, 1974, adopted only the highway and transit portions of the 1995 Plan. In their adoption resolution, the NIRPC Commission stated:

"The Aviation and Freight Subsystems are shown herein as a proposal developed for discussion by concerned parties, and that until their subsystems are analyzed comprehensively and cooperatively, any decisions related to these systems will require detailed, individual analysis by the Commission...."³

Because of the NIRPC action, the Airport System Plan portion of the 1995 Plan will be used in reviewing only northeastern Illinois area airport planning and development projects using federal funds. No matter how the plan is used, the many flexibilities of the plan proposals that will be identified later in this report must be acknowledged. And, of course, this regional plan in no way replaces the need for detailed airport feasibility, site selection and/or master planning studies of each individual airport situation.

THE ROLE OF AIRPORT SYSTEM PLANNING

Foremost, it must be recognized that the recommended airport system is general in nature. A system plan is intended to identify general areas of the region where additional airport capacity will be needed, either through expansion of existing airports or construction of new airports, in order to meet anticipated system-wide demands. It identifies the number, type, and general location of airports believed necessary for the system to operate ef-

fectively. It is not intended to specify exact sites for new airports or the exact configuration of expanded existing sites. It is the role of individual airport master plans, which must be prepared prior to the expenditure of federal airport development funds, to establish the exact location and configuration of publicly owned airports.

The recommendations of a system plan such as this are also to be considered flexible within limits. This plan's primary objective is to insure the orderly development of a complete system of airports of various types to meet the anticipated demand. Therefore, the number of general locations of these types of airports are of greater concern than the specific recommendations for individual sites. During the implementation phase of this plan, a number of factors could arise which would suggest a trade off between two or more airports. For example, if two privately owned airports are relatively close to one another and one is proposed to be acquired and developed as a Public VFR facility while the second is proposed to remain private, the possibility of reversing these roles must be recognized. Such a change may prove to be necessary or desirable because of specific site limitations or opportunities that have not been discovered at the system planning scale. The political realities which are involved in securing the necessary public sponsor for the acquisition of a privately owned airport may also influence such a trade off of roles.

A principle which guided the development of the recommendations was to expand and upgrade existing airports, wherever feasible, in lieu of developing new sites. This principle is believed to be desirable and necessary because of the relative scarcity of undeveloped land in the region that is both suitable for airport development and within a reasonable access time of the population centers to be served. In addition, current public opinion tends to be against airports for various reasons, making it difficult to gain public support for and acceptance of the establishment of new airports. As a result, a major feature of the recommended plan is the public acquisition of existing privately owned airports. New airport sites have been proposed only where it has been determined that the existing sites cannot be developed and expanded enough to satisfy the anticipated demands. These new sites must also be viewed with a degree of flexibility. If in subsequent master planning for the development or acquisition of existing sites, it is determined that the existing facilities may, in fact, be sufficient, a particular new site may not be necessary. On the other hand, if these studies indicate that an existing airport is more limited than was anticipated because of increased urban encroachment or other reasons, an additional new site may become necessary.

The fact that a large number of the existing airports are privately owned could present an additional problem. Because of increasing land development pressures around several of these airports, resulting in higher land values and increased taxes, the owners may be encouraged or forced to sell these sites for other uses before a public airport sponsor can be found. If a private airport proposed for public acquisition were to be sold before the acquisition takes place, a new site or further expansion of other existing sites would, most likely, be necessary. Consideration should be given to measures designed to encourage private airport owners to maintain

their airports until the necessary public sponsors can be found.

In discussing the flexibility of this system plan, it is not intended to imply that these recommendations are unfounded or that they may be ignored in the actual development of the airport system. The recommendations do represent what is believed to be the "best alternative" based on the information that was available during its formulation. The intended flexibility, as it has been discussed above, merely acknowledges the fact that new information is constantly being developed and the staff is gaining new insights into the status of the current system, its users, its problems and potential. In the period of time since these recommendations were prepared, there has been an increased opportunity to examine the existing facilities more closely. For example, through recent discussions with airport managers and operators, some of the political and public opinion factors which are likely to influence implementation decisions have been identified. As airport master planning studies are undertaken aimed at the implementation of this system plan, additional detailed information will become available, especially regarding the feasibility of various projects. If this additional information clearly supports a modification in the system plan which is consistent with the overall objective of the plan, it should be permitted. It is believed that a system plan should not be so rigidly defined that it cannot be modified as new information becomes available.

REPORT FORMAT - THE STUDY AREA APPROACH

A major portion of this report is devoted to an examination of the current airport situation in the region, the ideas that went into the formulation of the recommended plan and the potential for implementing these recommendations. In order to take a more detailed look at regional airport problems and allow a more manageable discussion of local issues and relationships between airports, the region has been divided into the five study areas identified on Figure I-3. Such a subdivision of the region is particularly useful in the comparison of individual airport problems, activity statistics and system roles. In the end, it is this airport-to-airport comparison that provides the basis for the region-wide airport system plan priority statement contained in the final chapter. Without this "Study Area Approach", it would be more difficult to focus upon the question of making recommendations to improve the airport system in northeastern Illinois.

Each of the five study areas is the subject of a chapter in this report. For each area, the existing airport facilities will be described, with special attention given to their development potential and/or limitations. The general socioeconomic characteristics of the study area will be discussed as a guide to future aviation demand and urban development pressures within the area. Where a particular airport clearly serves more than one study area, or is affected by airport development in other areas, these issues will be identified and discussed. After determining the general airport needs for each one, the plan recommendations and any special considerations that were made in arriving at them will be discussed.⁴ These study area discussions will also identify, on a case-by-case basis, possible modifications to the recommended plan. These modifications will suggest alterna-

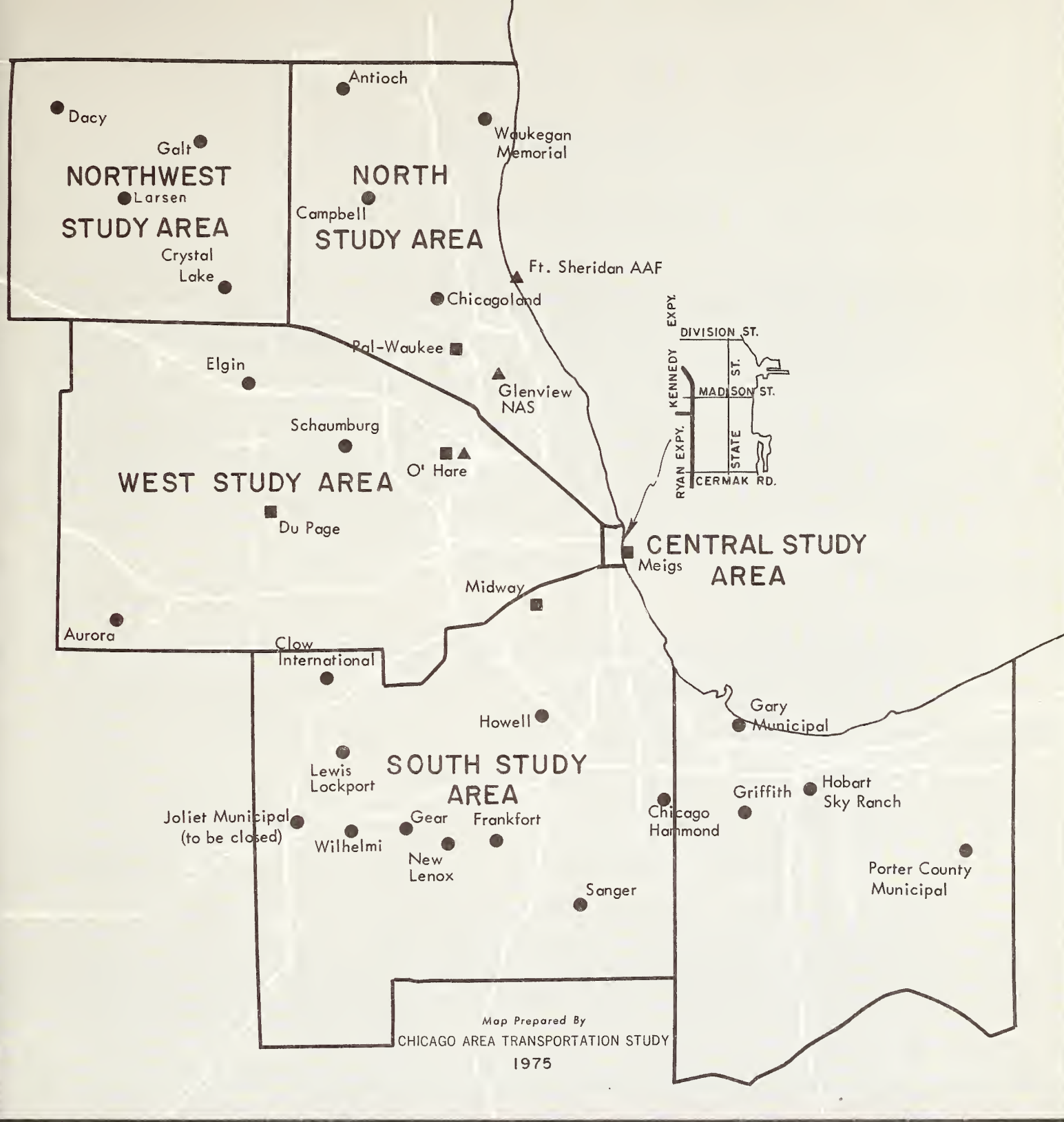


Figure I-3 STUDY AREA BOUNDARIES

PART II. THE NORTH STUDY AREA

DESCRIPTION OF THE AREA

The North Study Area, as defined for this report, includes all of Lake County and those portions of Cook County which lie to the north of the Chicago and North Western (CNW) Transportation Co. northwest commuter line (See Figure I-1, page 2 and Figure I-3, page 7.) The southern tip of the area borders the Chicago Loop, the subject of a separate study area chapter. Included in this North Study Area is a portion of the city of Chicago from the "Gold Coast" area north to Rogers Park and northwest to Edison Park. Suburban Cook County communities from Evanston to Glencoe along the lake and westward to Barrington are included. Along the northwest line of the CNW, the cities of Park Ridge, Des Plaines, Mount Prospect, Arlington Heights and Palatine straddle the border between the North and West Study Areas.

DEMOGRAPHIC CHARACTERISTICS

In 1970, approximately 1,710,000 people lived in the North Study Area. Of these people, 1,327,000 lived in the Cook County portion and the remaining 383,000 lived in Lake County. The city of Chicago accounts for approximately 773,000 or 45 percent of the total. The population density of this study area varies dramatically from the intensely developed southern tip to northwest Lake County. Portions of the lake shore north of the Chicago Loop exceed 40,000-people-per-square mile and generally exceed 20,000-per-square mile. In contrast, large areas of Lake County, especially in the central and northwest portions, have fewer than 100-people-per-square mile. Densities exceeding 1,000-square miles occur only in the county's larger communities with the greatest densities only around 7,000-per-square mile.

Between 1960 and 1970, the population of Lake County increased 30 percent, indicating the high rate of development that has occurred in recent years. Many communities more than doubled in size during the decade with some increasing by as much as 750 percent.¹ Considerable development has occurred in previously unincorporated areas of both counties, with existing communities often competing in annexation "battles". Population projections that were used in the development of this plan² indicate that the population of this study area will increase by an additional 38 percent by 1995, reaching 2,363,000. More than two-thirds of this 653,000 person increase is projected to occur in the Lake County portion of the study area resulting in a 117 percent increase for Lake County. This population increase will undoubtedly result in the urbanization of much of the area's remaining undeveloped land and simultaneously increase the demand for airport facilities. This rapid urban development has been the source of many of the airport system problems that will be discussed in a later section.

The Cook County portion of the study area is dominated by urban development. Essentially all land not occupied by parks, forest preserves and

similar open space uses within the City of Chicago is devoted to urban land uses. The suburban Cook County area is less completely developed, but relatively few large undeveloped tracts remain and development pressures are great. A general "filling in" of undeveloped land by all categories of urban land use and an increasing intensity of use (apartment and condominium developments instead of single family dwellings for example) appears to be occurring throughout the suburban Cook County portion of the area. In addition to the lack of land suitable for airport use, the proximity of Chicago-O'Hare International Airport, Glenview Naval Air Station (NAS), and Pal-Waukee Airport precludes any future airport development here and much of southern Lake County because of airspace conflicts.

Development in Lake County has taken a variety of forms. The most intense and complete urban development in the County is along the Lake Michigan shore line from Deerfield north to Waukegan, the largest city in the county. The south and southwest portions of the county are similar in character to northern Cook County where suburban development is intensifying. New apartment, condominium, and single family housing developments are springing up in areas between existing communities. Many large, undeveloped tracts are made more noticeable because of the real estate signs advertising proposed development or "prime commercial or residential sites" for sale.

The northwest portion of Lake County is dominated by many small lake-oriented communities in the "Chain-O-Lakes" region. Development in this area is of a somewhat different character being more recreation oriented than that in the southern part of the county. Many of the dwellings in these communities are summer or week-end second homes.

The least developed portions of Lake County are in northern Fremont and Wauconda townships, south and southwest of Grayslake, and areas west of the Tollway and north of Libertyville. Fairly large areas of undeveloped agricultural land remain in these areas, however, none of the county is free of scattered residential development.

Two major development or potential development areas are noteworthy at this point because of their scale and location relative to existing airports. The first of these is an area focused on the Hawthorn Center regional shopping center at Routes 21 and 60 south of Libertyville. This major retail center is at the core of a large scale residential development called New Century Town. Adjacent to this development to the south, a 645 acre development containing residential, commercial, research and industrial uses has been proposed³, 3,000 residential units are included in the development. This area lies approximately two miles northwest of Chicagoland Airport in an area previously occupied by agricultural uses.

The second major development proposal is for a 2,300 acre planned community immediately east and south of Grayslake to be called "Heartland"⁴. This development projected to have an ultimate population of approximately 34,000 and employ approximately 15,000 in industrial, office and commercial areas abuts the east side of Campbell's airport.

The topography of much of Lake County imposes certain limitations on

both urban and airport development. Many areas within the county are low and marshy and, therefore, unsuitable for development. Additional areas are quite hilly, making the siting of an airport impractical. As a result, future airport sites and expansions may be inhibited in two ways. The marshy areas, which are subject to flooding and provide a poor base for runway construction, eliminate many potential new airport sites. Many hilly areas also must be removed from consideration. Secondly, these same factors may also eliminate many sites for urban development and, therefore increase the competition for the remaining suitable terrain, raising land prices to levels unacceptable for airport use.

The topography of the Cook County portion of the North Study Area is generally flat and imposes no particular constraints on airport development. However, the urban development discussed above precludes the consideration of new airport sites in Cook County.

THE CURRENT AIRPORT SYSTEM

In the North Study Area, there are currently 18 airport facilities of various types. Two of these facilities, Glenview NAS and Ft. Sheridan, are military and not available for public use except in emergencies. Current policies of the Department of Defense regarding these two facilities preclude any joint Military/Civilian use in the foreseeable future. However, the effect of an alteration in these policies as they relate to Glenview NAS will be considered later in this report. Eleven additional airport facilities are classified as Restricted Landing Areas (RLA) by the State of Illinois. These sites are privately owned, private-use landing strips open to the public only by permission of the owner or in emergency situations. The remaining five airport facilities in this study area constitute the public-use airport system, the primary subject of this report. (See Table II-1.) Four of these five airports are privately owned and operated. The fifth, Waukegan Memorial Airport, is owned by a public agency and, therefore, eligible for Federal and State Grants-in-aid for airport improvements under current government policy. In general, all improvements at privately owned airports must be paid for by the airport owner from airport revenues (with the exception of certain navigational aids that may be installed by the FAA if demand warrants). As a result, airport improvements are usually held to a practical minimum and rarely conform with federal airport development standards. Deviations from these standards vary from one airport to another, but generally relate to runway characteristics such as runway characteristics such as width, strength, approach clearances, and building setbacks. This is not to say that these private facilities are necessarily unsafe; however, certain safety problems do exist and should be considered carefully in determining the future of each airport site. The five public-use airports currently serving the North Study Area represent a diversity of size, activity and role played in the system as a whole. Each of these airports will be described and discussed individually. The potential for future development and the problems that may exist at each site will be identified.

During 1972, one privately owned, public-use airport within the North

TABLE II-1

North Study Area - Existing Airports and Restricted Landing Areas

PUBLIC USE AIRPORTS

Airport Name	Associated		Runways		Estimated Based Aircraft ²
	City	Ownership	Number	Longest ¹	
1. Antioch	Antioch	Private	2	2,200' (T)	10
2. Campbell's	Grayslake	Private	2	3,300'	80
3. Chicagoland	Lincolnshire	Private	3	3,300'	180
4. Pal-Waukee	Wheeling	Private	5	5,000'	380
5. Waukegan Memorial	Waukegan	Public	2	4,600'	166
SUBTOTAL					816

RESTRICTED LANDING AREAS

(All privately owned - private use)

6. Atlas	Grayslake	1	2,040'	1
7. Clark	Third Lake	1	2,452'	1
8. Dodd	Long Grove	1	1,988'	1
9. Freier	Lake Barrington	1	1,363'	1
10. Gade	Antioch	1	1,500'	1
11. Maas	Zion	2	1,800'	3
12. McGraw	Lake Barrington	1	1,650'	3
13. Oak Knoll Farm	Island Lake	1	1,910'	1
14. Polidori	Wauconda	1	1,923'	1
15. Reinhardt	Gurnee	1	1,836'	1
16. Sky Roamers	Cary	1	1,203'	1
SUBTOTAL				14

MILITARY

17. Glenview NAS	Glenview	U.S. Government	2	8,600'	N.A.
18. Ft. Sheridan	Highwood	U.S. Government	1	3,000'	N.A.
TOTAL					830

¹ "Longest Runway" indicated for public-use airports is the longest hard surfaced unless all runways are turf (indicated with "T"). For restricted land areas, runway surface not considered.

² Based aircraft estimated for public-use airports from information provided by airport managers, except for Antioch which was determined from a recent aerial photograph. Restricted landing area based aircraft figures have been estimated by CATS' using federal and state records as well as field inspection, where possible. No estimates of aircraft based at military facilities have been made.

Study Area was closed. Sky Harbor airport in Northbrook had been the base for approximately 128 aircraft at the time of its closure and 155 a year earlier.⁵ The site of this former airport is being developed as an industrial park. According to a survey of pilots and aircraft owners conducted by CATS in 1969, approximately 642 pilots registered in the State of Illinois used Sky Harbor more frequently than any other airport.⁶ These pilots and the owners of the aircraft based at Sky Harbor were forced to find an alternative airport or quit flying. Data on what happened to these Sky Harbor users clearly shows that the closure has increased pressures on other airports in this study area, primarily Pal-Waukee and Chicagoland. Further, the development pressures which were the apparent cause of the closure of Sky Harbor Airport are evident today at both PalWaukee and Chicagoland. The combination of development pressures and private airport ownership presents the greatest problem to be overcome in maintaining an adequate public-use airport system in this study area and the entire region.

Consideration should also be given to airports outside of the region in Wisconsin which may serve some of the demand generated within the North Study Area. Kenosha Municipal Airport, located approximately 12 miles north-northwest of Waukegan Memorial, is the only Wisconsin airport located a reasonable distance from North Study Area users. It has two paved runways, the longest of which is 3,600 feet. This facility could serve as an alternative airport for some North Study Area users if Waukegan Memorial and Campbell's Airports become congested. However, it is not considered a viable alternative for users in the southern portions of the study area because of the excessive travel times involved. In addition, growth of demand in the Kenosha area could result in similar congestion at this facility. Kenosha and Waukegan Airports are sufficiently separated to avoid airspace conflicts under VFR conditions. However, the installation of an ILS at Waukegan will limit the potential for a similar installation at Kenosha. Coordination at the state and federal levels will be necessary to avoid potential conflicts.

Though not located within the boundaries of this study area, Chicago-O'Hare International Airport does exert a strong influence on aviation activity within the North Study Area. In turn, this airport is dependent on general aviation "reliever" airports located within this and other study areas in order to avoid serious congestion problems. These reliever airports serve a large amount of itinerant general aviation operations which might otherwise be forced to use Chicago-O'Hare International. For many hours of the day, it operates at or above its designed capacity and could not handle this additional traffic without serious delays. The availability of general aviation reliever airports also prevents serious problems of incompatible aircraft mix which would complicate operations at O'Hare more seriously than the added number of operations, alone, would cause. A total of six existing airports in the Chicago region have been designated as relievers for O'Hare in the Federal Aviation Administration's National Airport System Plan.⁷ Three of these, Pal-Waukee, Chicagoland, and Waukegan Memorial, are located in the North Study Area. An additional five relievers are proposed by the FAA for future development with no specific sites designated. It appears likely that one of these would be located in this study area. Without these reliever airports, it is doubtful that Chicago-O'Hare International could perform its primary role satisfactorily, the result being serious congestion of the airport and the airspace in that area.

Chicago-O'Hare International greatly affects the availability of airspace in this study area. The Chicago Terminal Control Area (TCA), which extends out from the center of Chicago-O'Hare International a distance of 20 nautical miles, covers all of the Cook County portion of the study area and almost one-half of Lake County. This TCA includes restrictions on the type of traffic permitted to operate within its limits and the type of equipment the aircraft must contain. The three-dimensional boundaries of the TCA are roughly comparable to an upside-down, three-layer wedding cake centered over the airport. Over most of the Cook County portion of the area, traffic is controlled at any altitude between 1,900 feet and 7,000 feet. The area around Pal-Waukee Airport is controlled from 3,000 feet to 7,000 feet by the TCA, below 3,000 feet, the Pal-Waukee Control Tower handles traffic. The part of Lake County included in the TCA is controlled from either 3,000 feet or 4,000 feet up to 7,000 feet. These restrictions limit the amount of airspace available for general aviation aircraft not equipped with the proper electronic equipment. Aircraft not properly equipped must remain below the 'floor' elevations of the TCA.

CURRENT AVIATION ACTIVITY

Illinois Division of Aeronautics registration figures indicate a total of 737 pilots registered with the State from Lake County and 4,654 from Cook County.⁸ Results of the 1969 Pilot and Aircraft Owner Survey conducted by CATS show that approximately 34 percent of the pilots registered in Cook County at that time lived in the North Study Area. If the distribution of pilots within the county has not changed significantly in the period since this survey, approximately 1,582 of the 4,654 Cook County pilots reside in the North Study Area, resulting in a total of 2,319 for the area. It should be noted that these figures represent the number of pilots registered in this area and not necessarily the number which actually reside in the area. Registration, while required by state law, is not easily enforced. Therefore, the actual number of pilots is probably higher than the registration figures indicate. It should also be emphasized that the number of pilots registered in the area is not the same as the number using airports located in the study area. For example, in the 1969 survey, a total of approximately 1,900 pilots from the North Study Area were surveyed. However, the number of pilots using the six public-use airports then available (including Sky Harbor airport which is now closed) was approximately 2,166.⁹ Many pilots residing outside this study area use its airports while some living in the area use airports located in other study areas or Wisconsin. In general, however, the boundaries chosen for this study area are supported by the distribution of pilots using the airport in the area. The only significant concentration of pilots using North Study Area airports that is not contained within the area is in Jefferson Park Township, south of the CNW. The major concentrations of users of these airports (based on the 1969 survey) are located in the in the Cook County portion of the study area and along the lake shore in Lake County.

According to the latest estimates made by the CATS, there are 816 aircraft based at the public-use airports in the North Study Area (see Table II-1). An additional 14 aircraft are estimated to be based at RLA's, bringing the total to 830 based aircraft.¹⁰ To illustrate the importance of

privately owned airport facilities in this study area, it should be noted that 80.0 percent of the aircraft based in this area are located at privately owned facilities. One airport, Pal-Waukee, accommodates 45.9 percent of the total and Chicagoland is the base for another 21.7 percent. Waukegan Memorial, the only public owned airport in the area, accommodates 166 aircraft or 20.0 percent of the total.

The amount of activity occurring at an airport or in the system as a whole is measured by the number of takeoff and landing operations performed. However, accurate counts of these operations are made and available only for airports equipped with a control tower. Only Pal-Waukee Airport in the North Study Area is so equipped. Estimates of the number of operations occurring at other airports are based on special counts performed for short periods, the number of based aircraft, or information provided by the airport management. It must be understood that these are only estimates, useful primarily to compare levels of activity and indicate the general magnitude of demand within the area. They should not be used to determine specific needs at a particular airport without verification. Actual manual or machine counts are a means of verifying the 5010 form figures. Table II-2 indicates the level of activity at airports within the North Study Area for Fiscal Year (FY) 1972 based on estimates and counts made by the FAA and included in its Terminal Area Forecast: 1974-1984. Activity at Sky Harbor Airport, closed shortly after these figures were developed, is included in this table because it is not possible to determine how much of this activity was transferred to other airports in this study area or in other areas, or how much was eliminated by the closure. No operations estimates have been included for the RLA's in the area. It is assumed that they are insignificant in numbers. With the possible exception of a RLA located approximately one mile north of Campbell's airport with a runway perpendicular to the east-west runway of that public-use airport, the RLA's in this study area do not conflict with the public-use airport system. Estimates of aircraft operations at the two military facilities also have not been made. This activity, especially at Glenview when Naval Reserve Units are active, is considerable and presents a limitation on airspace available for Pal-Waukee activity.

As can be seen in Table II-2, a very large percentage of the total aircraft operations in the North Study Area occurs at the privately owned facilities with only 20.7 percent occurring at the one public owned facility (with Sky Harbor airport figures included). Pal-Waukee and Chicagoland Airports obviously constitute the "core" of aviation activity in the study area. A circle of only three miles radius contains Pal-Waukee and Chicagoland Airports and the former site of Sky Harbor Airport. In FY 1972, these three airports accounted for 68.5 percent of the operations in this study area. Until more data are available, it cannot be determined how much of the total activity remains at the two airports left in this "core". It is likely, with the possible exception of Antioch Airport, that all airports in the study area had an increase in traffic following the closure of Sky Harbor Airport. It is known that traffic at Pal-Waukee Airport increased to 219,445 operations in FY 1974.¹¹ How much of this increase is attributable to the closure of Sky Harbor is a matter for speculation.

TABLE II-2
Current Airport Activity - North Study Area

Airport	Local (000's)	OPERATIONS		PERCENT OF TOTAL AREA OPERATIONS	
		Itinerant (000's)	Total (000's)	With Sky Harbor	Without Sky Harbor
Antioch	0.3	0.9	1.2	0.2	0.2
Campbell's	43	19	62	10.6	12.4
Chicagoland	74	32	106	18.0	21.3
Pal-Waukee	125	82	207	35.2	41.6
Waukegan Memorial	76	46	122	20.7	24.5
SUBTOTAL	318.3	179.9	498.2	84.7	100.0
Sky Harbor	70	20	90	15.3	
TOTAL	388.3	199.9	588.2	100.0	

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Terminal Area Forecast: 1974-1984, Oct. 1972, except for Antioch Airport which is from FAA Form 5010-1 dated Nov. 5, 1971.

Of the total number of operations indicated for airports in the study area, 34 percent are shown to be itinerant operations and 66 percent as local operations. At Antioch, 75 percent of the operations are shown as itinerant; however, the total number is very small. Of the busier airports, Pal-Waukee and Waukegan have the highest percentage of itinerant to total operations with 39.6 percent and 37.7 percent respectively. Sky Harbor was the lowest with only 22 percent itinerant operations. No exact breakdown is available, but a large portion of the local operations at these airports is attributable to flight training. Most of the remaining local operations are likely to be of a personal or recreational nature.

AN ASSESSMENT OF AIRPORT NEEDS IN THE NORTH STUDY AREA

The current level of activity at each airport in the North Study Area and the estimated capacity of these airports has been discussed above. These estimates are summarized in Table II-3. In order to determine if this system of airports is adequate to meet the future needs of users in this area, some estimates of future demand is necessary. For the purposes of this study, the FAA's Terminal Area Forecast, 1974-1984 was used to provide an indication of the level of demand to be anticipated by 1984, (roughly half way through the planning period). Estimates for Antioch were not included in this forecast. Therefore, the 1984 estimate for Antioch was made by the CATS, applying the average growth factor for all airports in the study area that were included in the FAA forecast. The estimated FY 1984 operations are also included in Table II-4 for comparison with current airport capacity.

TABLE II-3
Comparison of Current and Forecasted Annual Operations With
Operational Capacity for North Study Area Airports

Airport	Total FY 1972 Operations ¹	Practical Annual ² Capacity PANCAP	Forecasted FY 1984 Operations
Antioch	1,200	60,000	2,200
Campbell's	62,000	120,000	117,000
Chicagoland	106,000	110,000	218,000
Pal-Waukee	207,000	170,000	324,000
Waukegan Memorial	122,000	120,000	256,000
	<u>498,200</u>	<u>580,000</u>	<u>917,200</u>

¹ Various Sources, See Table II-2, p. 16.

² Federal Aviation Administration estimate, FAA forms 5090-2,3, "National Airport System Plan Entry Criteria Worksheets", Circa 1972, except for Antioch and Campbell's. PANCAP for these airports was estimated by CATS staff by comparison with other airports and reference to FAA Advisory Circular 150/5060-3A, Airport Capacity Criteria Used in Long-Range Planning, Dec. 1969.

³ From FAA, Terminal Area Forecast 1974-1984, Oct. 1972, except for Antioch which was estimated by CATS staff.

None of the figures in Table II-3 may be taken as absolute as they are only estimates. However, taken as a whole, they provide a reasonable means of assessing the current airport situation in the North Study Area. For example, it is shown that 85 percent of the current system capacity was being utilized in FY 1972. In reaching that level of operations, three of the five airports were operating very near or in excess of their theoretical capacity. While Pal-Waukee figures illustrate that this capacity may be exceeded by a substantial amount, this is not without rather serious congestion at certain times and possible safety hazards. The FAA criteria contained in Advisory Circular 150/5060-3A, Airport Capacity Criteria Used in Long-Range Planning indicate that planning for additional capacity related facilities is warranted when operations reach 60 percent of this Practical Annual Capacity figure. Each of these airports, Chicagoland, Pal-Waukee, and Waukegan Memorial, are well beyond this point with Pal-Waukee exceeding 120 percent.

Probably the most critical figures to be found in Table II-3 regarding the current airport situation is the fact that 79.3 percent of the estimated airport capacity is located at privately owned airports. Waukegan Memorial, the only public owned facility accounts for only 20.7 percent of the system's capacity. Even when expanded to its ultimate configuration as shown in the airport layout plan that has been prepared for Waukegan Memorial, its capacity of 230,000 annual operations is only 50 percent of the current

capacity provided at privately owned airports. When coupled with the remote location of Waukegan Memorial relative to the majority of North Study Area airport users, the publicly owned sector of the airport system must be considered extremely inadequate to meet the current and projected needs of the study area. The continued existence of the privately owned airports can not be assured under current conditions. Pal-Waukee and Chicagoland, accounting for 48.3 percent of the system capacity, must be considered in danger of closure in the near future. Campbell's Airport, with an additional 20.7 percent of the capacity, is also in an area where development pressures could result in closure within a few years. Under current conditions of land value, availability, and real estate tax policies, there is no reason to believe that the private sector could replace these facilities to make up for the lost of capacity.

The forecasted FY 1984 system-wide demand of 907,200 annual operations exceeds the current capacity by 337,200 operations. If Waukegan Memorial is assumed to be capable of handling the 230,000 annual operations indicated for its ultimate configuration, an additional capacity of 677,200 annual operations must be provided at other locations. In order to meet this level of demand within the study area, all of the existing privately owned airports are necessary. In addition, capacity improvements at these airports or new airport facilities with a capacity of 227,000 operations are indicated in order to satisfy 1984 demand. It must be emphasized that these demand figures are for 1984, a full decade prior to the end of the planning period. These forecasts are believed to be somewhat high for 1984, but entirely reasonable by the end of the planning period in 1995. It should also be noted that the FAA forecasts employed in this report included 173,000 operations for Sky Harbor Airport in FY 1984. Therefore, the forecasts for the other airports, particularly Chicagoland and Pal-Waukee, should probably be adjusted upward to account for the closure of Sky Harbor.

Table II-4 indicates the number of aircraft currently based at each airport in the study area and an estimate of the based aircraft capacity of each in its current configuration. Again, the importance of the privately owned airports is obvious. With the current land acquisition program at Waukegan Memorial, its capacity could probably be expanded to 500 or more aircraft. However, this would increase the percentage of based aircraft capacity at publicly owned facilities to only 37.6 percent from 21.3 percent. Again, this capacity is poorly located relative to the majority of demand. Additional capacity at Chicagoland and Pal-Waukee, which are closest to the concentrations of users, is estimated to be only 120 aircraft (all at Chicagoland). In addition, at the present time it is somewhat doubtful whether the owner of Chicagoland Airport will develop this additional capacity because of the questionable future of the airport.

Finally, the based aircraft capacity of Campbell's Airport could be improved significantly if major filling operations were undertaken. This is also considered unlikely under private ownership.

The demand and capacity figures that have been discussed above tend to disguise the role each airport plays in the system. The breakdown of itinerant and local traffic reveals some of the difference among airports.

TABLE II-4

Current Based Aircraft and Aircraft Capacity at North Study Area Airports

Airport	Current Based Aircraft	Estimated Capacity: Existing Configuration*	Percent Filled	Percent of Total Capacity
Antioch	10	50	20.0	4.7
Campbell's	80	100	80.0	9.5
Chicagoland	180	300	60.0	28.5
Pal-Waukee	380	380**	100	36.0
Waukegan Memorial	166	225	73.7	21.2
	<u>816</u>	<u>1055</u>	<u>77.3</u>	<u>100.0</u>

*Estimated by airport managers on CATS Airport Facilities Questionnaire for Chicagoland and Waukegan, estimated by CATS staff for others based on field inspection and aerial photographs.

**See discussion of based aircraft capacity in current Airport System section under Pal-Waukee.

The percentage of itinerant traffic varies within this study area from 30.2 percent at Chicagoland to 43.5 percent at Pal-Waukee¹² (Antioch is shown as 75 percent itinerant, but on an extremely low number of total operations). This provides some evidence of the different roles played by these two airports. However, even these figures do not reveal the differences as well as actually observing operations at each airport on a typical day. Much of Pal-Waukee's itinerant traffic consists of corporate jet and turbo-prop aircraft, for example. Chicagoland's traffic is predominately single-engine piston, including most of its itinerant traffic. Both airports serve a very large number of local training flights. The basic difference is in the character of the itinerant traffic. Of the three airports in this study area that have been designated by the FAA as "General Aviation Relievers" to Chicago-O'Hare International, Pal-Waukee is currently the most important in that it serves the bulk of the corporate jet and turboprop aircraft which might otherwise be forced or decide to use Chicago-O'Hare International. Therefore, from a system wide viewpoint, it is most critical to serve the current and forecast itinerant traffic at Pal-Waukee in preference to the local operations if a choice becomes necessary. The local operations will always be present, but there may be periods when they will have to be restricted so that itinerant traffic can be accommodated. Some of the local traffic may be forced to locate to other facilities if Pal-Waukee is to serve the important role of reliever to Chicago-O'Hare International.

Of special interest in meeting total demand is the capability to handle instrument operations during Instrument Flight Rule (IFR) conditions. This is especially necessary at the reliever airports. At the present time, all airports in the study area with the exception of Antioch have some type of

instrument approach in operation, as can be seen in Table II-5. Therefore, at the current time, the IFR demand is being provided for within the limitations of the available airspace. The possibility of losing the instrument landing capability at Pal-Waukee either through closing of the airport or increased obstructions must be noted. An alternative ILS runway location needs to be considered to avoid losing this important facility, necessary to provide relief to Chicago-O'Hare International under instrument conditions.

TABLE II-5

Instrument Capability-North Study Area Airports

AIRPORT	INSTRUMENT		
	APPROACH ?	LANDING SYSTEM ?	CONTROL TOWER ?
Antioch	No	No	No
Campbell's	Yes	No	No
Chicagoland	Yes	No	No
Pal-Waukee	Yes	Being Installed	Yes
Waukegan Memorial	Yes	Partial	No

1995 REGIONAL AIRPORT SYSTEM PLAN RECOMMENDATIONS - NORTH STUDY AREA

The primary feature of the 1995 Airport System Plan recommendations for the North Study Area is the public acquisition of existing privately owned airports in order to insure their continued existence. Three of the four existing privately-owned airports are recommended to be acquired by public agencies and be developed as "Public-Visual Flight Rules" (VFR) airports. Only Antioch, because of its site limitations and location relative to demand, is recommended to remain in private ownership. The demand and capacity considerations discussed in the previous section emphasize the importance of the capacity of these three airports. In order to meet the projected demand, it is essential that the capacity of these airports be retained and, where feasible, increased. Current development trends in conjunction with topographic considerations suggest that it would be impractical, if not impossible, to develop new airport facilities with sufficient capacity to replace these airports if they are lost to the system. The only way these facilities can be guaranteed to remain in the system is through public acquisition. Public ownership will also provide additional funding possibilities not available to private owners which will allow for improvements to these airports.

Waukegan Memorial Airport is recommended to remain in public ownership and be developed to its full potential as a "Public-Instrument Landing System" airport. This is consistent with the current development plans for this airport. Even with these four publicly owned facilities developed to their maximum feasible capacity, it is anticipated that demand will still exceed the practical annual capacity of the system by the later half of the planning period. In order to avoid serious congestion in the system, one

new airport is recommended for the North Study Area. This airport, identified as the "New Northwest" airport is proposed to be developed at some site located generally in the southwest quarter of Lake County. It is proposed as a complete "Public ILS" facility. A summary of the North Study Area recommendations can be found in Table II-6. Each of these recommendations will be described in more detail below, identifying the aspects which must be considered flexible.

TABLE II-6

North Study Area Recommendations
(Not a Priority Ranking)

<u>AIRPORT</u>	<u>RECOMMENDATIONS</u>
1. Campbell's	Publicly Owned, Visual Flight Rules
2. Chicagoland	Publicly Owned, Visual Flight Rules
3. Pal-Waukee	Publicly Owned, Visual Flight Rules ¹
4. New Northwest	Publicly Owned, Instrument Landing System
5. Waukegan Memorial	Publicly Owned, Instrument Landing System
6. Antioch	Remain Privately Owned
7. Glenview NAS	Dependent Upon Department of Defense Policy
8. Ft. Sheridan	Military
9. Privately Owned, Public Use and RLA's	No new sites recommended

¹ It should be noted that an ILS is being installed on the primary runway at Pal-Waukee. This improvement exceeds these recommendations. However, physical limitations of this airport prevent it from being developed consistent with all recommended improvements for a Public ILS facility (see Appendix, page 113).

Antioch Airport

This airport is recommended to remain in private ownership throughout the planning period. If economic or other considerations were to force its closure, any impact on the airport system as a whole would be minimal. Antioch does serve a useful role in providing access to a recreational area and providing a suitable facility for recreational flying. As such, it is a welcome component of the system which does not conflict with any of the other plan recommendations. Nothing in this plan should be taken as discouraging the owner of this airport from expanding or making any improvements to it that he believes are necessary.

Campbell's Airport

The existing capacity of this airport and as much expansion as is physically feasible is deemed essential to the regional airport system. At the present time, Campbell's Airport does not appear to be in any immediate danger of closure. However, trends indicate that development pressures will increase to the point that the possibility of closure must be recognized. In order to insure the continued existence and development of this airport, it is recommended that it be acquired by a public body eligible for Federal and State Grants-in-aid. Concurrent with the acquisition of Campbell's Airport, it is strongly recommended that the appropriate jurisdiction establish height control and compatible land-use zoning to the extent permitted by state law.

In order to meet the criteria developed for this plan for the "Public-VFR" category airport, several improvements are indicated. (See Appendix page 114 for the proposed characteristics of each category of airport.) A primary hard-surfaced runway of at least 3800 feet by 75 feet should eventually be developed. A crosswind runway of approximately 3,000 feet is also recommended. Considerable filling and drainage improvements will be necessary to adequately provide for basing of additional aircraft. Purchase of clear zones or aviation easements on the runway ends should be accomplished in order to protect the approaches.

Chicagoland Airport

As with Campbell's Airport, the continued existence of Chicagoland Airport is essential to the airport system of the North Study Area. It accounts for 19 percent of the system's capacity and is one of the two remaining airports within a reasonable access time to the majority of users. Public acquisition of this facility is necessary in the immediate future if closure is to be avoided. The 1995 plan recommends that this airport be developed as a "Public VFR" facility.

Upon acquisition, immediate steps must be taken to establish compatible land-use zoning and make any necessary revisions to the existing height control zoning. Development to "Public VFR" standards would necessitate the construction of a hard-surfaced runway of between 3,800 feet and 5,400 feet, dependent on the findings of the necessary Master Planning Study. Development of parallel taxiways and any other improvements that would increase the

capacity of the airport are recommended, within the limitations of the site. Purchase of clear zones and navigation easements is considered essential.

Pal-Waukee Airport

Pal-Waukee Airport is currently the most important airport in the North Study Area and its continued existence is the most critical to the future of the system. Its current level of activity, capacity, and importance as a general aviation reliever to Chicago-O'Hare International is far greater than any other airport in the study area. If Pal-Waukee were to close, the system in this area would lose 29.3 percent of its current capacity and be forced to absorb almost 220,000 annual operations. It is most unlikely that the remaining airports in this or the other study areas could safely accommodate this traffic now operating from Pal-Waukee. The pressures on Chicago-O'Hare International from corporate and business aircraft would increase dramatically. It can not be assumed that those now using Pal-Waukee would voluntarily shift their operations to airports where there is still excess capacity (e.g., Waukegan Memorial, et cetera) because of the often extreme access times. Even if this could be accomplished through force, it would be undesirable. Such a move would "use up" so large a proportion of the remaining capacity that there would be little available to accommodate the normal growth in activity for the remainder of the planning period.

Like the other privately-owned facilities in the study area, however, the continued existence of Pal-Waukee Airport cannot be assured unless it is acquired by a public body. Public acquisition of Pal-Waukee and its development as a "Public VFR" facility is strongly recommended. A note of explanation of this recommended category is necessary. It is believed that a "Public ILS" facility is most desirable in this location; however, the serious physical limitations of the existing airport prevents the development of such a facility as described in Appendix page 113. A 5,400 foot runway is not feasible at Pal-Waukee. In fact, as a public facility, the existing 5,000 foot runway will most likely have to be reduced in its effective length by displaced thresholds. The ILS that is currently being installed by the FAA at Pal-Waukee is possible only through the waiver of many standards normally required for such an installation. As a result, the approach minimums will most likely be considerably higher than might otherwise be possible. In addition, this installation could be rendered useless by development on the north end of the runway. Neither the FAA or the airport owner has control over the height of structures built on this land or the type of activities conducted. Therefore, even with an ILS, Pal-Waukee can not meet the characteristics of a complete "Public ILS" facility. Its development to the maximum extent feasible, consistent with public safety, is however, strongly recommended.

In order to retain as much operation and based aircraft capacity as possible and still meet the safety standards deemed necessary by the FAA, it is recommended that every effort be made to expand the land area of the airport. Open land remaining north and east of the drainage ditch which runs along the airport boundary should be acquired for the relocation of hangars and terminal facilities (or other uses recommended in a detailed

Master Planning Study). This move would allow greater conformance with building setback and aircraft parking setbacks and allow the removal of some obstructions. Operational capacity can be improved significantly by constructing parallel taxiways wherever feasible.

It is recognized that in conforming with FAA standards, the usable lengths of the runways may be reduced significantly. As a result, the airport may become unusable by some of the current users, both based and itinerant. (Primarily larger corporate jets and turboprops such as Grumman Gulfstream I's and II's, BAC-111's, Lockheed Jetstars, and F-27's.) The general aviation reliever role of Pal-Waukee would be compromised somewhat by this reduction in the type of aircraft which may use the airport. However, the majority of aircraft, including many corporate jets, would still be able to use the airport. Current trends in corporate aircraft technology are emphasizing shorter runway requirements and significantly quieter performance (e.g., Cessna Citation, Falcon 10, and Aerospatiale Corvette). In order to comply with Federal Aviation Regulations, Part 36, which establishes noise standards for new aircraft certification, all new designs and major modifications will be quieter than most current models. This will reduce problems of incompatibility of airports such as Pal-Waukee with their surrounding communities.

One of the most important recommendations for Pal-Waukee or any of the public airports is the development of height control and compatible land-use zoning in the vicinity of the airport. Little can be done to change the development that has already occurred around Pal-Waukee, but improved zoning controls could prevent the situation from growing worse. Control over the height of structures is most critical in the vicinity of this airport in order to avoid any additional obstructions to the approaches and resulting reduction in usable runway length.

Waukegan Memorial Airport.

The current situation at Waukegan is considered to be one of the best in the entire region. The recommendations of this plan are generally consistent with the Airport Layout Plan which has already been prepared. This airport is recommended to be developed as a "Public ILS" facility. Stage I of the Airport Layout Plan proposes extension of the primary north-east/southwest runway to 6,000 feet and complete ILS installation. These improvements satisfy the minimum characteristics of a "Public ILS" facility. Stages II and III of the plan increase the capacity of the airport both operationally and in terms of based aircraft through construction of a 3,900-foot parallel runway and additional hangar and tie down facilities. However, the proposed extensions of the primary runway to an ultimate 8,000 feet do not appear necessary for this airport to meet the needs projected in the 1995 Plan. The capacity improvements are of much greater significance. An ultimate capacity of 230,000 annual operations is projected. Expansion of this capacity is recommended in this plan also. The recommendation contained in the airport layout plan for revision of airport zoning to include height control and compatible land use zoning¹³ based on the ultimate airport configuration is strongly supported. Immediate steps to realize this recommendation should be taken by the appropriate authorities.

New Northwest Airport.

New Northwest Airport is a proposed Public ILS facility to be generally located in the southwest quarter of Lake County. As has been discussed in the section on airport need, the existing airports in the North Study Area, even if guaranteed to continue in operation through public ownership are not sufficient to meet the FAA projections of traffic for FY 1984. Through public ownership and improvement, of three additional airports as recommended above, this system capacity could be improved significantly. However, as indicated in Table II-7 which shows rough estimates of the capacity that might ultimately be expected, the existing system still falls short of projected 1984 demand by as much as 100,000 annual operations. Even this estimate does not account for the additional 173,000 operations that had been projected for Sky Harbor Airport prior to its closure. Even if a significant portion of the demand were to be accommodated in McHenry County where excess capacity should remain (see Northwest Study Area), there is still need for additional capacity; if not by 1984, certainly before the 1995 target year for this plan.

TABLE II-7
Existing and Projected Ultimate Capacity Estimates
for North Study Area Airport System

Airport	ANNUAL CAPACITY (OPERATIONS)	
	Current Practical ¹	Estimated Ultimate ²
Antioch	60,000	60,000
Campbell's	120,000	150,000
Chicagoland	110,000	150,000
Pal-Waukee	170,000	230,000
Waukegan Memorial	120,000	230,000
SUBTOTAL	580,000	820,000
New Northwest	-	250,000
TOTAL	580,000	1,070,000
Estimated (FAA) FY 1984 Total Operations ³		
	Without Sky Harbor Estimates	917,200
	With Sky Harbor Estimate	1,090,200

¹ For Source of Estimates, see Table II-3.

² Estimates made by CATS based on assumed ultimate configurations feasible on each site. They are not intended to be design criteria, only a general indication of types of improvements considered necessary given demand projections.

³ See Table II-3.

In addition to the need for additional capacity, there is a lack of complete, low minimums, ILS capability in a location convenient enough to provide the necessary relief to Chicago-O'Hare International. Pal-Waukee's capability is somewhat limited and can not be guaranteed. The only other probable complete ILS facility in the study area is at Waukegan which lacks the necessary convenience to adequately serve the general aviation reliever role. Therefore, the New Northwest Airport is proposed as a complete "Public ILS" facility.

A problem which could not be ignored in preparing this plan is the possibility of the closure of either Pal-Waukee or Chicagoland Airports before the necessary public acquisition could be accomplished. In the event of such an occurrence, the importance of a New Northwest Airport to replace the lost capacity becomes critical, thus increasing the priority importance of this facility in the regional plan.

The current land availability situation in this portion of the study area indicates the immediate need for a feasibility and site selection study for this major general aviation facility. Though the need for the facility may be some years in the future, land must be acquired in the near future or no site may be available when needed. A sponsor for such a study should be sought immediately.

New Privately Owned, Public-Use Airports and Restricted Landing Areas.

No new privately owned, public-use airports or RLA's are recommended to be developed in this plan. The limited amount of airspace available to meet the projected demand requires that this demand be concentrated at as few sites as practical. The number recommended in this plan represents the maximum that could safely be located within this limited airspace. Though new private facilities would satisfy a portion of the demand, the effect would be to spread the aircraft operations to a greater number of sites, complicating and increasing the danger of VFR operations in this congested area.

An additional effect of new privately owned, public use airports and RLA's might be to decrease the immediacy of the need for public airports in the mind of potential airport sponsors. While this may not appear necessarily bad, past experience shows that this "solution" to the problem of meeting demand is only temporary and may decrease the chances of developing adequate public facilities at a later date. Until a review procedure involving the FAA, the Illinois Department of Transportation, Division of Aeronautics, and local and regional authorities can be established to determine the effects on new privately owned facilities, a moratorium on their establishment is recommended.

Military Airports.

The future of the two military airport facilities, Glenview NAS and Ft. Sheridan, is dependent on U.S. Department of Defense policies. The current prohibition of their use by civilian aircraft is expected to continue.

In the case of Ft. Sheridan, civilian use would be of no real benefit to the airport system because of its limited size and capacity. Joint use of Glenview NAS or complete civilian takeover, however, would greatly benefit the North Study Area airport system. Glenview could serve the larger corporate itinerant traffic now operating at Pal-Waukee without any significant changes. It could also accommodate a complete ILS, providing the necessary relief to Chicago-O'Hare International. If a policy for civilian use of this facility could be worked out, the added capacity would reduce the pressures on Pal-Waukee and possibly eliminate the need for a New Northwest Airport. In the event of such an occurrence, the potential environmental, economic, airspace, and operational impacts of this change in role for Glenview NAS must be carefully assessed.

At the present time no changes in the Department of Defense policy are anticipated. It is recommended that contacts be maintained to determine if any changes in policy can be expected at any time in the future.

IMPLEMENTATION OF THE NORTH STUDY AREA RECOMMENDATIONS - A PRIORITY STATEMENT

The development of adequate airport facilities in the North Study Area has been shown to depend primarily on the public acquisition and development of existing privately owned airports. These airports are in danger of closing as a result of increasing development pressures. Their replacement with new facilities, either publicly or by other privately owned airports is not considered feasible because of the limited availability of suitable land. In order to achieve this public acquisition, interested public sponsors must be found and master plans developed.

From an airspace standpoint, it is questionable whether any airports in addition to the ones recommended in this plan could even be developed in this study area. Therefore, it is recommended that sufficient land should be purchased at each public airport site to permit the maximum feasible expansion of capacity in order to allow for growth beyond the forecasted demand employed in this plan. Individual airport master plans will be necessary to determine what this ultimate capacity would be and how much land would be necessary. At Campbell's Airport, the existing land area may be sufficient to allow for the construction of a parallel east/west runway.

Of primary importance at this time is the public acquisition of Pal-Waukee and Chicagoland Airports which are in the most immediate danger of closure. Together they account for 48 percent of the system's capacity and are best located to meet the needs of the majority of users. Sixty-three percent of the North Study Area's current operations occur at these two facilities. Each is operating at or above its practical annual capacity and could not absorb the additional traffic if one of the facilities were to close. Approximately 560 aircraft are based at the two airports. The remaining airports could scarcely accommodate half of these.

Of second priority is the public acquisition of Campbell's Airport. It has the greatest potential for an increase in the number of operations of the privately owned facilities in this study area. Little can be done

to expand the number of operations at Pal-Waukee and Chicagoland as they are at such high levels today. Campbell's is operating at approximately 50 percent of its capacity. However, in order to accommodate these increases, improvements to the airport are necessary that may not be feasible for a private owner.

Site selection and land acquisition for a New Northwest Airport are the final priority in this study area. Initiation of a feasibility and site selection study should begin as soon as possible, because the funds necessary are minimal compared with the above priorities. Land acquisition should begin as soon as feasible, dependent on the outcome of the study. The possibility of combining this feasibility study with the feasibility/master planning study for Campbell's and/or Chicagoland should be considered (dependent on jurisdiction of the sponsor).

Throughout this discussion, it has been assumed that development of Waukegan Memorial Airport will continue as demand warrants. However, acquisition of Pal-Waukee and Chicagoland is considered more important than further development at Waukegan and should, therefore, take precedence as far as state and federal funding are concerned.

¹ U.S. Department of Commerce. 1970 Census of Population: Number of Inhabitants (Illinois), August 1971, pp 15-20 to 15-39.

² Northeastern Illinois Planning Commission.

³ The Trib, Area VII, Friday, April 19, 1974.

⁴Chicago Tribune, Friday, January 25, 1974.

⁵FAA Forms 5010-1 dated May 25, 1971 and March 20, 1972.

⁶David A. NewMyer, "Airport Usage Analysis - The 1969 CATS Sruvey of Pilots and Aircraft Owners", CATS Research News Vol. 16, Nol. 1 March 1974, pp 1-11.

⁷Preliminary "National Airport System Plan Entry Criteria Worksheets", FAA Form 5090-3.

⁸Illinois Department of Transportation, Division of Aeronautics, Illinois Aviation at a Glance (Pilot Registration), 1973.

⁹David A. NewMyer, Op. Cit.

¹⁰These figures do not include any estimate of military aircraft based at Glenview NAS or Ft. Sheridan

¹¹From official traffic counts of FAA control tower at Pal-Waukee Airport.

¹²Calendar Year 1973 figures from Pal-Waukee tower monthly reports (FAA form 7230-11).

¹³J.M. Audd and Associated, op. cit., p. 45.

PART III. THE NORTHWEST STUDY AREA

DESCRIPTION OF THE STUDY AREA

This study area comprises the entire McHenry County. McHenry County borders on Lake County to the east, Wisconsin on the north, Boone County to the west, Kane County to the south and a small portion of Cook County on the southeast.

DEMOGRAPHIC CHARACTERISTICS¹

The Northwest Study Area is dominated by rural landscape except in the southeastern portion of the county. The southeastern portion of the county has the most concentrated population densities in and around the city of Crystal Lake, the largest municipality in the study area. Harvard, McHenry and Woodstock are the only other municipalities of greater than 5,000 persons. These communities are in the northwestern, northeastern and north central portions of the area. The southwestern part is a collection of fairly small communities and farms having no major centers of population.

From an airport development standpoint there are no major land development pressures except in the southeastern portion of the study area. However, some moderately extensive gravel pit operations in the area, present a problem of a different sort. These operations not only constitute a terrain problem, they also imply that a mineral rights problem may exist at potential long-range airport sites.

THE CURRENT AIRPORT SYSTEM

Table III-1 lists the airport facilities in the Northwest Study Area. All of the airport facilities in this area are privately owned. Two of the four public-use facilities have paved runways. At least one of the RLA's has a paved runway of significant length. The 18 RLA's in the study area do not appear to have a very large amount of usage either in terms of based aircraft or in terms of aircraft operations.

Airport closings have not been a very significant problem in the past. One public-use airport, Hebron, has reverted to private use in recent years. It was a very limited facility and can perform virtually the same functions it previously performed with its new RLA status. There do not seem to be any imminent future airport closings. However, the fact that all of the airports in this study area are privately owned does not assure the continued provisions of airport services into the long term future. This is particularly true of Crystal Lake Airport, which is facing some land development pressures in the southeastern portion of the area. In fact, with nearby gravel pit operations, mineral rights will also tend to be a problem for this airport. It is difficult to characterize any other major

TABLE III-1

Northwest Study Area Existing Airport and Restricted Landing Areas

PUBLIC USE AIRPORTS

Name	Associated City	Ownership	Number	Longest Runways	Estimated Based Aircraft
1. Crystal Lake	Crystal Lake	Private	2	3,000	91
2. Dacy	Harvard	Private	3	3,700T	104
3. Galt	Greenwood	Private	2	3,000	70
4. Larsen-Woodstock	Woodstock	Private	1	2,400T	<u>6</u>

Public-Use Subtotal 271

RESTRICTED LANDING AREAS
(All Privately Owned)

5. Kirkpatrick	Harvard	Private	1	2,072	1
6. Nelson	Harvard	Private	1	1,742	2
7. Twin Garden Farms	Harvard	Private	1	2,640	2
8. Adkins	Harvard	Private	1	1,919	2
9. Walpole	Marengo	Private	1	1,378	0
10. Far Field	Marengo	Private	1	1,935	5
11. Kessler	Marengo	Private	1	1,835	1
12. Flying B.	Marengo	Private	1	1,800	1
13. H. O. W.	Marengo	Private	1	1,520	1
14. Hilbert	Union	Private	1	1,320	1
15. Aavang	Huntley	Private	1	1,700	5
16. Killoy	Alden	Private	1	1,805	1
17. Kole	Hebron	Private	1	2,600	3
18. Northern Pump Co.	McHenry	Private	1	4,305	0
19. Richardson	Spring Grove	Private	1	1,700	1
20. Sheldon	Spring Grove	Private	1	2,091	1
21. Kuranz	Barrington Hills	Private	1	1,900	1
22. Rutherford Seaplane	Algonquin	Private	1	5,500	<u>1</u>

RLA Subtotal 29

TOTAL BASED AIRCRAFT 300

The "Longest Runway" indicated for public-use airports in this table is the longest hard surfaced runway, unless all runways are turf (indicated with a "T"). For RLA's, the runway surface was not considered.

Based aircraft estimates for public-use airports are from the Chicago Area Transportation Study Airport Facilities Questionnaire. Restricted landing area based aircraft figures have been estimated by CATS' using federal and state records as well as field inspection, where possible.

SOURCES: Division of Aeronautics, Illinois Department of Transportation; Airports District Office of the Federal Aviation Administration; Great Lakes Region, Chicago Area Transportation Study field inspections and surveys.

problems for the public-use airports in the system. If anything, the status of general aviation business trends (pilot starts, aircraft sales, fuel sales, et cetera) will be the most important consideration in terms of these northwest area airports staying in business.

A final item to mention is the potential conflict of airports located across the Wisconsin state line. Currently, there is no such problem in the Northwest Study Area, but the future possibility exists. Presently, there is no real conflict. However, because of the Lake Geneva-Playboy Airport proximity, as well as several RLA's in southern Wisconsin, the development of Dacy Airport and Galt must be monitored carefully so as to avoid potential airspace conflicts. It also should be pointed out that airports in southern Wisconsin, as well as Boone County, Illinois (to the west), might affect the market/service characteristics of Northwest Study Area airports by providing equal or better airport services than can be found within its boundary.

CURRENT AVIATION ACTIVITY

Table III-2 presents the pertinent current airport activity data for the Northwest Study Area. It can be noted from Table III-2 that there is a high percentage of local aircraft operations as compared to itinerant operations. It should be noted that, in comparing Table III-1 with Table III-2, the operations figure for Dacy Airport appears low when considering the number of aircraft based there. For example, Dacy has more based aircraft than Crystal Lake Airport yet only half the operations. This calls for further analysis of Dacy Airport's role in future planning studies.

The aircraft operations capacities for each of the public-use airports in the study area are shown in Table III-3. This table identifies very clearly the operations capacity surplus in this study area. However, it should be noted that much of this extra capacity is available at Larsen-Woodstock Airport, which is probably the most limited of the existing public-use airports remaining in the Northwest Study Area.

AN ASSESSMENT OF AIRPORT NEEDS

Future aircraft operations estimates for Northwest Study Area airports are presented in Table III-4, which also lists the present airfield capacities for comparative purposes. The FY 1984 forecast information still falls short of present airport capacity in the area. It shows that the capacity of the area's airports is 65.4 percent, filled by the FY 1984 forecasted operations demand. It is also evident that over half of the remaining operations capacity is at Larsen-Woodstock Airport which, as previously mentioned, is a limited single turf runway facility. Of course, there are also limitations in the forecast. First of all, approved forecasts were not available to the year 1995. Second, based aircraft forecasts were not available for any time frame. However, using these available forecasts was sufficient to make a first approximation of projected airport need.

TABLE III-2

Current Airport Activity - Northwest Study Area

Airport	AIRCRAFT OPERATIONS		Total
	Local	Itinerant	
Crystal Lake	28,060	15,425	43,485
Dacy	10,000	12,960	22,960
Galt	37,300	17,200	54,500
Larsen-Woodstock	<u>860</u>	<u>370</u>	<u>1,233</u>
TOTALS	76,220	45,955	122,178

SOURCE: FAA Forms 5010 for individual airports (circa 1972).

TABLE III-3

Current Operations Compared to Capacity Northwest Study Area

Airport	1972 Operations ¹	Capacity ²
Crystal Lake	43,485	108,000
Dacy-Harvard	22,960	67,000
Galt-Greenwood	54,500	108,000
Larsen-Woodstock	<u>1,233</u>	<u>60,000*</u>
Totals	122,178	343,000

Summary

1972 Estimate	122,178
Present Public-Use Capacity	343,000
Percent Capacity Now Used in Area	35.6
Percent of Regional G.A. Total	7.1

¹ From FAA's 5010 Airport Master Record Forms Circa 1972. Incidentally, these figures are the same as those appearing as the FY'72 baseline number in the FAA's Terminal Area Forecast 1974-1984 for the above airports.

² From FAA Forms 5090-2,3, "National Airport System Plan Entry Criteria Worksheets", Circa 1972.

*Estimated by CATS using FAA Advisory Circular 150/5060-3A, Airport Capacity Criteria Used in Long-Range Planning, Dec. 1969.

In meeting future needs, the Northwest Study Area faces the dilemma which results from examining the issues of private versus public ownership of transportation facilities. In this case, 100 percent of the airport facilities in this area are in the private sector. Thus, their continued existence as viable transportation facilities cannot be guaranteed. The CATS' search for an answer to the Northwest Study Area public airport need question was based on the assumption that the provision of public-owned facilities is the only way presently available to preserve adequate airport facilities in the long term.

An additional question of need arises when one considers demand overlapping from other study areas. The adjacent North Study Area in particular may face a short-term demand problem due to airport closures. With this demand, even greater pressure may be put on Northwest Study Area airports particularly if Crystal Lake were to close due to land pressures.

TABLE III-4

Northwest Study Area Activity Forecasts Compared
to Present Airfield Capacity

AIRPORT	CAPACITY	1984 FORECAST
Crystal Lake	108,000	83,000
Dacy	67,000	42,000
Galt	108,000	97,000
Larsen-Woodstock	<u>60,000</u>	<u>2,263 *</u>
TOTALS	343,000	224,263

See previous table comparing capacities and present activity.

Federal Aviation Administration, Terminal Area Forecast, 1974-1984 (Wash, D.C.: FAA, Oct. 1972), pp GL-4 to GL-18.

*Estimated by CATS using the overall FY 1974 to FY 1984 growth factor derived from the other three airports in the Northwest Study Area. This factor was applied to the 1972 figure contained on Larson's 5010 Form.

Another area of airport need is that related to the storage of aircraft. Table III-5 indicates the approximate capacity of each airport for based aircraft and the percent to which this available space is occupied.

As with the aircraft operations capacity analysis, there appears to be adequate aircraft storage capacity in the Northwest Study Area. However, if there is an airport closure, there will be a tighter situation with regard to aircraft storage in this area.

A final indicator of airport need in the study area is the instrument capability of the airports in the area. Table III-6 summarizes these capabilities.

TABLE III-5

Aircraft Basing Capacity Northwest Study Area
Public-Use Airports

AIRPORT	PRESENT BASED AIRCRAFT	CAPACITY	PERCENT FILLED
Crystal Lake	91	250	36.4
Dacy	104	300	34.6
Galt	70	200	35.0
Larsen-Woodstock	<u>6</u>	<u>50</u>	<u>12.0</u>
OVERALL	271	800	33.9

SOURCE: CATS Airport Facilities Questionnaires and Estimates based on the current airport configuration.

TABLE III-6

Instrument Capability Northwest Study Area Airports

Airport	INSTRUMENT		
	Approach ?	Landing System ?	Control Tower ?
Crystal Lake	Yes	No	No
Dacy	No	No	No
Galt	Yes	No	No
Larsen-Woodstock	No	No	No

SOURCE: CATS Airport Facilities Questionnaires and Airport Managers.

This table indicates that, at present, the Northwest Study Area has very limited instrument capability. It would also appear that there is little demand for such capabilities at present, probably because of the low incidence of business and corporate aircraft usage in the area. As such usage expands beyond the Very High Frequency Omni-range (VOR) approach capability at Crystal Lake Airport and Galt, the area's instrument capability will have to be expanded.

1995 REGIONAL AIRPORT SYSTEM PLAN RECOMMENDATIONS - NORTHWEST STUDY AREA

General

The 1995 Airport Plan recommendations for the Northwest Study Area call for the provision of two publicly owned general aviation reliever airports.

TABLE III-7

Northwest Study Area Recommendations - 1995
Regional Airport System Plan (Not a Priority Ranking)

AIRPORT	RECOMMENDATIONS
Crystal Lake	Publicly Owned, Visual Flight Rules.
Galt	Publicly Owned, Visual Flight Rules.
Dacy	Remain Privately Owned.
Larsen-Woodstock	Remain Privately Owned.
Privately Owned, Public Use Airports and RLA's	No new sites are recommended.

These two airports are to be provided through the conversion of existing privately owned airports to public ownership. The following table details these recommendations.

In order to further describe the study area recommendations, each individual facility proposal will be discussed further. This section will concentrate on the reasons for the proposal as well as some of the "flexibilities" within the overall recommendation.

Crystal Lake.

This airport is presently serving a significant level of demand. It also is in a location which allows it to serve more than the Northwest Study Area demand. In fact, the airport manager noted in a discussion with CATS representatives² that a significant number of aircraft owners and pilots using Crystal Lake come from the Barrington area, much of which is in the North and West Study Areas. Thus, Crystal Lake's service role is very much one of providing airport services to both the city of Crystal Lake as well as the greater northwest suburban area of the region.³

Crystal Lake Airport does have a few immediate problems in terms of land development pressures and available land for expansion. The 1995 Plan recommendation for this airport provides for the following detailed proposals at Crystal Lake:

- A. Public Ownership;
- B. Land Acquisition for a paved northwest-southeast runway;
- C. Construction of the new paved runway as well as a parallel taxiway system;

- D. Continuation of the existing published instrument approach, with a possible revision (if approved by FAA) to the new paved runway;
- E. Zoning for compatible land uses and height restrictions in runway approach areas, existing and proposed; and,
- F. Increased based aircraft capacity.

An airport master planning study is now underway for this airport. If work proceeds as it has been outlined recently, alternative sites will be examined for the airport. Such a study is not in conflict with these regional recommendations as long as it is recognized that any alternative site should also be considered a replacement airport for the existing facility. Otherwise, serious conflicts could develop, which would be detrimental to the future of the regional airport system. Finally, it should be noted that any land acquisition for airport usage in the vicinity of the present airport should move quickly because of land-use pressures and airport operational considerations.

Galt.

As opposed to Crystal Lake, Galt is under no particular land-use or operational pressures. Land is available for expansion of this facility. The 1995 Plan indicates the following specifics for the Galt proposal:

- A. Public Ownership;
- B. Paved extension to at least 3,800 feet for existing east-west runway (land acquisition if necessary);
- C. A paved crosswind runway;
- D. A paved taxiway parallel to the east-west runway;
- E. More aircraft basing capacity; and
- F. Compatible land use and height restriction zoning.

In terms of flexibility, Galt has some land area available for expansion (given the agreement of surrounding land owners) and also could be moved to a new site. Because of extensive open land in the north central and northeastern portions of the study area, the new site possibility should be considered in any future study of Galt. Of course, the present operator at Galt would have to be consulted in such a study. Finally, in no way would these statements be considered as supporting an additional airport over and above what is in the area today. The demand in the area simply would not justify such an alternative.

Dacy.

As far as the 1995 Plan is concerned, this airport remains in private ownership throughout the plan period. The reason for the decision was that there did not seem to be adequate demand to justify public expenditure on this airport. However, this situation could change in the near future with some resultant changes in regional plans. Dacy Airport's status will be reviewed in future planning efforts, particularly with reference to the

Northwest Study Area's ability to serve increased demand due to possible airport closings in other study areas. Finally, it should be noted that, if Crystal Lake Airport is lost due to land development pressures, then Dacy will become a higher priority airport for public acquisition.

Larsen.

This airport was not included in the plan recommendations as a publicly owned facility because of its extremely limited role today as a public-use airport. Furthermore, it does not have sufficient land area to warrant further consideration as an expanded airport facility.

Privately Owned, Public-Use Airports and RLA's.

In the Northwest Study Area, the apparent abundance of available land makes it difficult, at first, to recommend no new privately owned airport sites of any kind. This is especially true in the west central and southwest portions of the area. At present, however, there are a number of considerations which would make such proposals difficult to justify. First of all, many of the "open" areas in the Northwest Study Area are only open as far as public-use airports are concerned. The southwestern part of the study area in particular does not have an existing public-use facility, but it does have a number of RLA's. Second, the present airports have sufficient capacity and will continue to have it into the next decade at least. Finally, planning and zoning officials within the McHenry County government have taken a negative stance on additional airport facilities from a land use point of view. If the situation changes significantly, there may be cause to reevaluate this recommendation. This is particularly true if there are any public-use airport closures. The limitation on further RLA sites follows a similar line of reasoning. In addition to all those things presented regarding new privately owned, public-use airports, there is the additional consideration of the problem that RLA's cause with regard to limiting the choices available for new public-owned airport sites. The continued proliferation of these private strips will make any further planning for public-use airports quite difficult.

As mentioned in the other Study Area chapters, an informal review process with regard to new privately owned airport certificates should be established. This would allow some review of these applications with regard to their impact on the long-range regional airport's plan before the facility is built. A moratorium on the granting of new operating certificates for all privately owned facilities is therefore recommended until the review process can be established.

IMPLEMENTATION OF NORTHWEST STUDY AREA RECOMMENDATIONS - A PRIORITY STATEMENT

The most important step in implementing these recommendations will be to develop adequate local public sponsorship for each publicly owned airport proposed in the plan. Once this sponsorship can be settled, then FAA funded airport master planning studies can begin. The specific priorities

in this study area are straight forward. First, something must be done very quickly to either acquire or replace Crystal Lake Airport. If a replacement airport is selected on a new site, it must be in the same general portion of the Northwest Study Area, in other words, generally south or southeast of the city of Crystal Lake. Second, and a more long-range concept, Galt must be acquired or replaced. If the replacement route is followed, the site selected should be in the general vicinity of the present airport, and should not conflict with any other existing airport facilities.

¹Parts of this discussion have been drawn from the U.S. Department of Commerce, 1970 Census of Population: Number of Inhabitants (Illinois), August 1971, pp. 15-14, 15-15, 15-19, and 15-21.

²July 23, 1974.

³This is supported by CATS 1969 General Aviation Survey data.

PART IV. THE WEST STUDY AREA

DESCRIPTION OF THE STUDY AREA

The West Study Area contains the central, west central west/northwest portions of Cook County, and all of DuPage and Kane Counties. The area is bounded by the Chicago and North Western's Northwest Line and the Kane/McHenry county line on the north, the Kane/DeKalb county line on the west, the Kane/Kendall county line, the DuPage/Will county line and I-55 on the south and the city of Chicago Central Area on the east. (Please refer to Figure I-3 in the Introduction.)

DEMOGRAPHIC CHARACTERISTICS¹

The changes in population for various units of government between 1960 and 1970 serve to illustrate the demographic trends present in the West Study Area. These figures, in turn, give a partial illustration of the issue of land development pressures and how they might affect the provision of the airport facilities in the West Study Area.

The portions of Cook County in the West Study Area seem to be characterized by two types of population change between 1960 and 1970. That portion of Cook County directly west of the Loop seems to have experienced little or no real population growth between 1960 and 1970. However, that part lying northwest of Chicago-O'Hare International and the Loop experienced population growth of sometimes phenomenal proportions (e.g., over 1,000 percent for Schaumburg) between 1960 and 1970.

In the case of DuPage County, which is included in its entirety in the West Study Area, a similar contrast in population growth exists among municipalities within the county. Generally, the highest rate of population growth in DuPage County seems to have occurred in the central parts (from Hanover Park in the north to Woodridge in the south). Thus, the eastern part of the county, which was already substantially developed by 1960, experienced somewhat less population expansion overall between 1960 and 1970 than the central portions. The western portions of DuPage County experienced moderately high growth as compared to the eastern portions, but nothing like the central portions.

Kane County, which is also included entirely in the West Study Area, did not experience the high overall county growth that DuPage did (56.9 versus 20.5 percent). This seems to be partly explained by the somewhat remote location of the county vis-a-vis the Chicago Loop thus rendering it less desirable than DuPage County as a potential "bedroom community" location. Municipalities in Kane County, therefore, have only moderately high growth rates in comparison to other parts of the West Study Area. Kane County is, in fact, the second least populous county in northeastern Illinois.

Thus, in terms of land development and population pressure, the West

Study Area has a wide range of conditions. In general, there are only a few small areas of suburban Cook and DuPage Counties with sufficient open land to build an all-new small general aviation airport. In fact, the central portion of DuPage County alone has lost three such utility airports in the past five years; two of the three during 1973. These airports were York Township (1968), Hinsdale (1973) and Mitchell Field (1973). The loss of airports in a rapidly developing area of the region illustrates one of the key issues to be faced in planning for the region's airport system; e.g., how to relate the provision of airport facilities to future land use development in the Region. It also points out that privately-owned airports (all three airports were of this category of ownership) simply cannot be counted on to play crucial "reliever" roles in the metropolitan airport system.

THE CURRENT AIRPORT SYSTEM

Table IV-1 shows that the West Study Area presently contains five public-use airports and at least twenty-two RLA's. As noted in the previous section, the public-use sector of the airport system in this study area has just experienced some closures. The two most recent airport closures, Hinsdale and Mitchell, resulted in the relocation of nearly 200 aircraft and an estimated 700 pilots to another airport facilities.² The RLA portion of the system is also subject to fluctuations. The West Study Area has experienced an increase in the number of RLA's in recent years. Furthermore, these RLA's have assumed an increasing importance within the overall airport system.

In terms of total operations, the West Study Area contains the two busiest airports in the Northeastern Illinois Region, Chicago-O'Hare International and DuPage County Airports. While the former is noted as the busiest airport in the world and serves primarily scheduled air carriers, few people realize that DuPage County Airport is one of the top 30 busiest airports (total operations) in the nation, according to fiscal year 1973 FAA statistics.³ DuPage County Airport's operations figures are almost entirely a result of corporate, business and personal aviation activity.

In terms of the number of based aircraft at the airports in the West Study Area, there are some 991 at all of the public-use airports and RLA's in this tricity area. Of these 1,000, an estimated 15.5 percent or 155 aircraft, are based at RLA's. It is significant to note that among those RLA's are a few which are classified as "residential fly-in developments". These include Naper Aero, Casa DeAero and the Landings. Not only do these RLA's offer better facilities (in terms of paved runways of 2,500 or more feet in length) than at most other RLA's, they have attracted significant numbers of based aircraft. Thus, RLA's have, in general, begun to fill a certain kind of demand for airport services. With public-use airports such as DuPage County approaching their maximum feasible aircraft basing capacity (about 500 aircraft), and airports such as Hinsdale and Mitchell closing down, RLA's are providing an alternative way to accommodate based aircraft without opening new public-use airports.

On the negative side, however, little is known about the operations

TABLE IV-1

West Study Area Existing Airports and Restricted Landing Area

<u>PUBLIC USE AIRPORTS</u>				Estimated Based Aircraft ²
Name	Associated City	Ownership	Runways	
1. Chicago-O'Hare International	Chicago	Public	11,600	20
2. Schaumburg	Schaumburg	Private	3,000	103
3. DuPage County	West Chicago	Public	4,000 ¹	479
4. Aurora Municipal	Sugar Grove	Public	5,100	156
5. Elgin	Elgin	Private	2,600	87
PUBLIC-USE SUBTOTAL				845
<u>RESTRICTED LANDING AREAS (All Privately-Owned)</u>				
6. Kuranz	Barrington	-	1,900	1
7. Mill Rose Farm	Barrington	-	1,798	0
8. Brookridge	Downers Grove	-	3,000	40
9. MacQuilkan	Downers Grove	-	1,219	7
10. Butler	Oakbrook	-	2,600	1
11. Warrenville Flying Club	Warrenville	-	2,299	6
12. Aero Twin	Wayne	-	1,593	20
13. Naper Aero	Naperville	-	2,568	50
14. Casa DeAero	Hampshire	-	2,974	10
15. Esser	Hampshire	-	1,394	6
16. Koppie	Gilbert	-	1,775	1
17. Brunner	West Dundee	-	3,700	1
18. Fox Valley Seaplane	Elgin	-	2,375	1
19. Olson	Plato Center	-	2,024	8
20. Daley	Lily Lake	-	1,634	0
21. Miller-Maple Park	Maple Park	-	2,319	1
22. Julius (North Aurora)	North Aurora	-	2,781	1
23. Family Service Corp.	Aurora	-	1,773	1
24. Landings ³	Huntley	-	3,440	0
25. Dewey	Big Rock	-	2,018	0
26. Getzelman	Hampshire	-	New - No Figures	
27. Maddock	-	-	New - No Figures	
RLA SUBTOTAL				155
TOTAL AIRCRAFT				1,000

¹Soon to be lengthened to 5,000 feet

²Based aircraft estimates are from various sources. FAA 5010 Form estimates were used for Chicago-O'Hare International and Schaumburg Airports. For Chicago-O'Hare International, DuPage County, Aurora and Elgin Airports, estimates were made in early 1974 by the respective airport managers or Fixed Base Operators. For RLA's, federal and state records were supplemented by field inspections where possible. The figures are generally as of mid-1973.

³Not open for based aircraft at the time when estimates were made.

SOURCES: Division of Aeronautics, Illinois Department of Transportation; Airports District Office, Federal Aviation Administration (Great Lakes Region); Chicago Area Transportation Study field inspections and surveys.

activity that takes place at these RLA's. Even without specific data, it becomes obvious to the casual observer that RLA's with 20 or more active aircraft could have a significant impact on the remaining and planned public-use airports in the area. This is particularly true in terms of air-space impacts upon nearby public-use airports, RLA's could also have a negative impact upon the economics of commercial airport operations and on the availability of land areas for new commercial airport sites. Therefore, the presence of existing RLA's has to be carefully considered in the delineation of future airport system plan proposals.

Another factor in the structure of the existing West Study Area airport system to be studied, was the question of airport sponsorship or, more generally, the public's interest in airports. Each airport has its own peculiar relationship with the communities it serves. Chicago-O'Hare International Airport, for example, is owned and operated by the city of Chicago. Yet, it is nearly surrounded by various northwest suburban communities including Park Ridge, Elk Grove Village, Des Plaines and Bensenville. Environmentally, it is a problem area with these communities. Recently there has been growing contention over the fact that the city of Chicago gets the direct economic benefit of the airport while the communities around the airport are subjected to its noise. This problem of a lack of identification of the local suburban communities with the airport operations continues to be a problem, which may affect the role that the facility will play in the future.

DuPage County Airport has a similar problem in that the facility is owned and operated by the county, but is situated directly on the Kane-DuPage County boundary. The residents of St. Charles, Kane County (west of the airport), have been against the expansion of the airport. So, again there is the problem of an area that is affected or will potentially be affected by the operations of an airport but its residents have little recourse directly to the public owner of the facility. This situation has been magnified recently with the formation of an airport authority to take over the ownership and operation of the DuPage County Airport. This issue went to referendum in June 1974. The referendum was followed by a legal battle which is still underway because of the reluctance of DuPage County to relinquish control over the airport. This is an issue that will affect the future of the airports in the West Study Area as well as in the 1995 Airport System Plan.

Aurora Municipal Airport is a third facility in the West Study Area facing jurisdiction problems. In this case, however, the party seeking to get involved in airport operations is not necessarily opposed to the expansion of the airport as seems to be the case with the newly-created Fox Valley Airport Authority. With reference to the Aurora Municipal Airport, owned by the city of Aurora, the situation has come about because the airport is located far to the west of the city proper and adjacent to the village of Sugar Grove. Sugar Grove, in fact, has annexed most of the land to the north, west and south of the airport. The city of Aurora, therefore, will have problems with any further expansion of this facility unless it can get the cooperation of Sugar Grove.

In order to get this cooperation, the city may eventually have to

relinquish some control of the airport to the village (through an airport authority). Depending upon how this situation progresses, there could be some constraint upon the future capacity within the airport system caused by politically-enforced limitations at Aurora Municipal.

Elgin and Schaumburg Airports, as existing privately-owned facilities, do not have the same type of public competition over the control of their operations. Instead, these two airports, through their private sector operators, have been looking for potential public sponsors for their respective airports. In both cases, they have aligned themselves with a single municipality, e.g., the city of Elgin in the case of Elgin Airport and the village of Schaumburg in the case of Schaumburg Airport. The central question that has to be faced by these two airport operators is whether or not they want to avoid future contention over operational control of their facilities by supporting an airport authority approach rather than a single municipality approach to ownership.

In view of the fact that proposed airport master planning studies of these two facilities may opt for new replacement sites for the existing facilities, there might be some good reasons to study the airport authority question within the master plans. In Elgin's case, there might be some reason to seek county involvement in the control of the airport if it is located on a new site. This is because of the apparent county policy of proposing stringent controls on the location of new airport facilities within its boundaries. In Schaumburg's case, there is reason to consider the involvement of additional municipalities simply to avoid hostility and to create a broader base of support for the airport (regardless of location).

This study area does not appear to be in a potential crisis situation due to further airport closings as are other study areas. Instead, its problem is one of maintaining the public backing for the airports that now exist through a period when expansion of these airports will probably be needed to meet future demand. This does not make these airports any less important in the regional view. In fact, dealing with the immediate problem of political considerations may require more effort of a demanding nature than will be required to "save" airports in some of the other study areas.

CURRENT AVIATION ACTIVITY

Table IV-2 summarizes the Current Airport Activity at West Study Area general aviation airports. It can be seen that local airport operations are a major part of the total operations picture in the West Study Area. It also can be noted that capacity does not appear to be a problem at present.

Local activity will always be a significant portion of the systemwide airport operations picture as long as people want to learn to fly and the teaching methods do not change. If this basic assumption is correct, then consideration must be given to the handling of local training flights at all airports in the system except where safety considerations preclude such activity. This exclusion of local activity has already occurred at Chicago-O'Hare International and Chicago-Meigs Airports.

TABLE IV-2
Current Airport Activity and Capacity Estimates -
West Study Area General Aviation Airports

	LOCAL ¹	TOTAL ²	CAPACITY
Aurora Municipal	100,000	135,000	198,000
DuPage County	177,224	276,087	258,000
Elgin	61,736	93,191	110,000
Schaumburg	<u>30,000</u>	<u>60,000</u>	<u>105,000</u>
OVERALL	368,960	564,278	671,000

¹ FAA Form 5010, FAA Airport Master Record, "Estimated General Aviation Operations". Except for DuPage County figures which are from the FAA's Airport Traffic Activity, Fiscal Year 1973, pp. 88-93.

² From Federal Aviation Administration Forms 5090-2,3, "National Airport System Plan Entry Criteria Worksheets", Circa 1972.

This analysis must include some discussion of Chicago-O'Hare International Airport, because it is the key airport within the Regional System. This is not to say that its future operational role can be discussed adequately within this report. Instead, assumptions have been made regarding the future role of Chicago-O'Hare International and this assumed role affects the remainder of the airports in the West Study Area.⁴ Chicago-O'Hare International's future role is connected directly to the growth of scheduled air passenger traffic and how well it can handle this growth. Thus, while in the immediate future it is to remain the primary air carrier airport serving the Chicago-Northwest Indiana Region, its long-term role depends greatly upon whether or not the operation and "growth" of the facility within its present boundaries can be flexible enough to handle additional growth in air carrier activity. All indications point to the fact that Chicago-O'Hare International, with some improvements in the layout of the services on the field plus some expected air traffic control and landing improvements, will be capable of handling most of the Region's air carrier traffic into the 1990's. Of course, there is some question as to how general aviation operations will fit into this situation as Chicago-O'Hare International begins to operate at capacity at more than just the morning and evening peak periods.

It is probably a reasonable assumption that future general aviation operations will not be allowed to increase in absolute numbers over today's volumes there. The time may also come when this volume will have to be cut to allow for growth in the air carrier segment. In either case, this will require the Region's airport system to become more capable than it is today of handling the rather sophisticated corporate and business aircraft

that now use Chicago-O'Hare International on an all-weather, year-around basis. In terms of aircraft hangaring, usable runway length and ILS capability, today's airport system in the Region is incapable of absorbing any influx of corporate/business jet activity that might "overflow."

AN ASSESSMENT OF AIRPORT NEEDS

The only forecast available at the time this plan was being prepared was the FAA's Terminal Area Forecast, 1974-1984.⁵ It shows the following numbers for the West Study Area Airports:

TABLE IV-3

FAA Terminal Area Forecasts West Study Area Airports (Total Operations)

<u>AIRPORT</u>	<u>"ACTUAL" FY 1972-3</u>	<u>FORECASTED FY 1984</u>	<u>PERCENT INCREASE</u>
Aurora Municipal	135,000	290,000	114.8
Chicago-O'Hare International	666,000	710,000	6.2
Schaumburg	60,000	127,000	52.8
Elgin	93,191	200,000	114.6
DuPage County	276,087	400,000	44.8

There are some interesting observations that can be drawn from these numbers. The most obvious is that Chicago-O'Hare International is assumed to be very close to its capacity today with little room for further growth. In terms of actual numbers of operations, DuPage County absorbs the most additional traffic with 124,000 "new" operations. This figure may, however, be reached much sooner than FY 1984 since the forecast does not account for the closing of Hinsdale Airport and Mitchell Field, both relatively near DuPage County Airport. The FAA, in fact, forecasted 190,000 total operations at Hinsdale alone by FY 1984. The impact of some of these 190,000 operations plus part of the 25,000 operations that formerly occurred at Mitchell, diverting to DuPage would be to "use up" much of that capacity assumed to be filled by "natural growth" in aviation activity through 1984.

This apparent increase in the overall rate of growth of aeronautical activity at DuPage caused by airport closings can be seen to increase the importance of all the remaining airports in the West Study Area. In other words, as DuPage approaches its operational capacity, Elgin, Schaumburg and Aurora Airports must assume a greater role in serving the activity that DuPage cannot serve. Again, it should be pointed out that runway additions at DuPage could postpone this problem for a while, but this sort of expansion cannot be counted on considering the present political climate.

A second area of airport facilities need that should be addressed in this study area report is that of aircraft basing capability and accommodating general aviation local training operations. Fees from based aircraft (tie-down and hangar fees) and flight training are, along with fuel sales, the basic revenue-producing operations on most airports. Therefore, these areas of airport operations have important impacts upon long-range airport planning considerations.

Table IV-4 shows the total number of aircraft estimated to be based at West Study Area airports and RLA's according to our latest sources, and, also, indicates the percent to which the available space is occupied.

TABLE IV-4
West Study Area Aircraft Basing Capacity

	NUMBER OF AIRCRAFT	ESTIMATED PRESENT TOTAL AVAILABLE SPACE	PERCENTAGE FILLED
Chicago-O'Hare International	20	20	100
Aurora Municipal	156	220	71
DuPage County	479	500	96
Elgin	87	150	58
Schaumburg	103	150	69
(CATS estimate)	—	—	—
TOTAL	845	1040	81

SOURCE: CATS Airport Facilities Questionnaires and CATS estimates.
(Current airport configuration.)

In analyzing the numbers in Table IV-4, recall that Chicago-O'Hare International is a special case operationally. In the long-term, however, a relocation of general aviation services may allow for some additional hangar space for based aircraft. But, such plans are at least two years from finalization due to the time frame of the Chicago-O'Hare International Airport Master Plan study being proposed by the city of Chicago. Also, if one assumes it will continue in its present role of serving the more sophisticated segments of general aviation, then any new hangar space will probably be limited in both the number and kind of aircraft it will serve.

The most striking fact shown in Table IV-4 is that 96 percent of the present based aircraft capacity at DuPage County Airport is now filled. This means that most of the remaining unused capacity is located at the two Kane County airports (Aurora Municipal and Elgin) and at Schaumburg Airport. Of course, Aurora Municipal could probably handle more based aircraft than shown in the table through an expansion of its facilities, as could Elgin and Schaumburg on a more limited basis. This action (expansion of aircraft basing capacity) might be questionable at DuPage County Airport where more

aircraft might mean a saturation of available runway capacity. At the three airports where based aircraft expansion is possible and will probably be called for in their respective on-going airport master planning studies, runway capacity is not a particular problem. However, it is clear that the type of aircraft that can be based at two of the three airports is limited. In other words, of the three, only Aurora Municipal can now handle jet aircraft on a regular basis. Due to runway length limitations, Elgin and Schaumburg can only be expected to handle small turbo-prop aircraft without more runway length.

Another area of airport need involves the analysis of the instrument capability of West Study Area Airports. This issue also very clearly relates to the question of "relieving" Chicago-O'Hare International. The IFR capability of the public-use, general aviation airports in the West Study Area is described in Table IV-5.

TABLE IV-5

Instrument Capability - West Study Area General Aviation Airports

	<u>INSTRUMENT APPROACH ?</u>	<u>INSTRUMENT LANDING SYSTEM ?</u>	<u>CONTROL TOWER ?</u>
Aurora Municipal	Yes	No	Yes (Feb. 1975)
DuPage County	Yes	Localizer	Yes
Elgin	Yes	No	No
Schaumburg	No	No	No

SOURCE: CATS Airport Facilities Questionnaires; Airport Managers

Of course, in comparison to the use that Chicago-O'Hare International gets under instrument conditions, the West Study Area general aviation airports are lightly used. The important concept to keep in mind, however, is that the more attractive these airports can be made for instrument operations, then the more relief these airports can provide to Chicago-O'Hare International. While this will mean more complex FAA Air Traffic Control procedures for the terminal area, it may result in a lessening of the concentrated traffic at Chicago-O'Hare International during instrument weather conditions.

Another aspect of airport need that should be addressed is that part of the total activity in the Study Area that is served by RLA's. As it has been pointed out, some 15.5 percent of the aircraft based at West Study Area Airports are at RLA's. This means that these facilities do play a significant role in supplying aircraft storage services. There is no data to indicate how significant RLS's are within the total operation picture in the Region. It is clear, however, that increased usage of RLA's has occurred at a time when the congestion at, and costs of, using public-use airports have been on the upswing. It follows, then, that many of the owners of smaller aircraft who fly for personal transportation reasons or for pleasure have been affected most by these factors. It is this type of flying,

then, that seems to be served by RLA's in the Chicago area. The existing RLA's in the West Study Area will continue to provide such aviation services in the future. However, until the full effect of the recent proliferation in the numbers of these facilities is determined, little can be said about projecting the proper locations for new RLA's.

It can be seen that the ability of the airport system to meet the different types of aviation demand is a question of airport service "roles." Chicago-O'Hare International obviously has a special service role in meeting the needs of the scheduled air carriers. Chicago-Midway Airport serves in an air carrier and general aviation "reliever" role for Chicago-O'Hare International. Similarly, the general aviation "reliever" airports have a special service role in terms of meeting the needs of corporate/business flying that might otherwise take place there. Also, these reliever fields, particularly in outlying parts of the area, serve flight school training programs to various degrees as do the smaller nonreliever airports. Finally, RLA's meet a certain aspect of aeronautical demand that is not being fully met at many of the public-use airports today, a convenient place for pleasure fliers to store and operate their aircraft. These service roles, along with aircraft basing capacity and instrument operating capability were important considerations in CATS' 1995 Airport System Plan for the West Study Area.

A final case to be made regarding airport need in the West Study Area is represented in Table IV-6. It shows that West Study Area Airports may be seriously congested without additional capacity. Again, it should be pointed out that this table does not include nearly 200,000 operations forecast for Hinsdale Airport by 1984 since that airport is now closed. To put it another way, there will be a 51.6 percent greater demand than supply in terms of aircraft operations in the West Study Area, not counting Chicago-O'Hare International. Thus, a new or expanded Elgin Airport, a parallel runway at Aurora Municipal, a New West Airport and all existing airports in the West Study Area are necessary if capacity is to meet demand by the mid-1980's. Of course, this does not include meeting demands that might result from airport closings in an adjacent Study Areas or outside the Region.

TABLE IV-6

West Study Area Activity Forecasts Compared to Present Airfield Capacity

	CAPACITY ¹	FY '84 FORECAST ²
Chicago-O'Hare International	597,000	710,000
Aurora Municipal	198,000	290,000
DuPage County	258,000	400,000
Elgin	110,000*	200,000
Schaumburg	<u>105,000</u>	<u>127,000</u>
TOTALS	1,268,000	1,727,000
Without Chicago-O'Hare International	671,000	1,017,000

¹From FAA Forms 5090-2,3, "National Airport System Plan Entry Criteria Worksheets," Circa 1972.

² FAA, Terminal Area Forecast, 1974-1984, (Wash, D.C.: F.A.A., Oct. 1972), pp. 6L-4 to 6L-18.

*CATS Estimate using FAA Advisory Circular 150/5060-3A, Airport Capacity Criteria Used in Long-Range Planning, Dec. 1969.

1995 REGIONAL AIRPORT SYSTEM PLAN RECOMMENDATIONS - WEST STUDY AREA

General.

In summary, the 1995 plan recommendations (please refer to Figure I-1, page 2 in the Introduction) indicate that all of the public-use airports now in this study area should be publicly owned by 1995. Also, at least one all-new airport is proposed for the West Study Area. This means that both Elgin and Schaumburg Airports, or their replacements, must be acquired by public agencies prior to 1995. The recommendations are as follows:

TABLE IV-7
West Study Area Recommendations - 1995 Regional
Airport System Plan (Not a Priority Ranking)

AIRPORT NAME	RECOMMENDATION
1. Aurora Municipal	Public ILS (with Basic Transport and some General Transport capability).
2. Chicago-O'Hare International	Air Carrier - primary hub.
3. DuPage County	Public ILS (with Basic Transport and some General Transport capability).
4. New Elgin	Public ILS (with Basic Transport and some General Transport capability).
5. Schaumburg	Public VFR (with Basic Utility capability).
6. New West Airport	Public VFR (with General Utility capability).
7. Privately Owned Public-Use Airports and RLA's	No new sites are recommended.

In order to further define the plan recommendations, it is important to summarize the basic issues involved in each individual airport recommendation. This summary will identify the flexibility and constraints in the development of each airport in the West Study Area.

Aurora Municipal.

One of the key airports in the region wide airport system, Aurora Municipal is proposed to continue and expand its important role as a general aviation reliever for Chicago-O'Hare International. More important than this reliever role will be that of serving the industrial and business growth in southern Kane County during the time frame covered by the plan. As an ever growing transportation facility in this area, Aurora Municipal Airport will be in a good position to provide air transportation service to the West Study Area of the Region. This is especially true because of its close proximity to the East-West Tollway and U.S. 30. Also, the proposed Fox Valley Freeway will provide another important access link to the Aurora area from the north which will provide the populated areas in east central Kane County along the Fox River with quicker access south toward Aurora. Aurora Municipal is already a good airport facility with a reasonable chance to expand its overall service role provided something is done to avoid the aforementioned jurisdiction problems which could arise between the city of Aurora and the village of Sugar Grove.

There is presently an airport master plan study underway for Aurora Municipal which is looking into the expansion of its service role and the problems encountered. Among the items being covered in the study are these:

- A. Expansion of aircraft ramp and hangar parking space capacity;
- B. The timing of the extension of the existing 5,100 foot east-west runway;
- C. The timing of the installation of an ILS;
- D. The acquisition of adequate "clear zone" land area for all runways with additional noise buffer land for the long runways;
- E. Working with the local government agencies controlling land use planning and zoning on land adjacent to the airport in order to establish compatible land use growth policies in these nearby areas.

Depending upon how each of these master planning concepts is implemented, Aurora Municipal's role in the regional airport system will begin to expand. This role, in turn, affects the entire regional airport system, particularly in the West Study Area and areas immediately south and west (Kendall, Will and DeKalb Counties). For example, if aircraft basing capacity is not expanded at Aurora Municipal, this will most definitely affect the regional airport system's capability to absorb additional demand through 1995. Also, if an ILS is not installed the nearest airports with such capability (DuPage County, Chicago-Midway and Gary Municipal) are not located, favorably to provide convenient all-weather service to Aurora-area users. Therefore, since the integrity and substance of the overall 1995 Airport System Plan recommendations depend greatly upon the ability of Aurora Municipal to up-grade its physical plant and instrument landing capability, these two project areas are recommended as key aspects of the regional system plan proposals for 1995.

Chicago-O'Hare International

As the busiest airport in the world, Chicago-O'Hare International has an obviously crucial role to play in the future composition and development of the Region's Airport System. One of the key assumptions behind the recommendations contained within the 1995 Airport System Plan is that it will continue to function as the primary air carrier hub airport serving the Chicago-Northwest Indiana Region throughout the 1995 plan period. Of course, continuance in this role will necessitate significant improvements and/or changes in the following areas:

- A. Noise abatement;
- B. Expanded air carrier and commuter airline relief provided by Chicago-Midway and Chicago-Meigs Airports;
- C. Expanded corporate/business aviation relief provided by both new facilities on Chicago-O'Hare International itself and by a better system of general aviation reliever airports around the Chicago-Northwest Indiana Region;
- D. Phasing out of military activity at Chicago-O'Hare - International;
- E. Expansion of the landside capacity of its (roadway, transit access, terminal buildings and auto parking); and,
- F. Continued improvements in air traffic control procedures accompanied by efficient management of the use of airspace in the O'Hare Terminal Control Area (TCA).

As with Aurora Municipal, these and other airport-related questions are presently included in an Airport Master Planning Study of Chicago-O'Hare International financed in part by the FAA through the city of Chicago. With or without the master plan study, it is clear that Chicago-O'Hare International is the cornerstone of the Regional Airport System around which the airspace utilization and airfield capacity of the remainder of the system must be structured. Therefore, the continued support of related service improvement projects there, such as ground access capacity expansion, runway and taxiway reconstruction, terminal building expansion and general aviation ground services relocation/expansion, will have a beneficial impact upon the rest of the airport system.

It should be noted that the early recognition of the type of role that corporate/business aviation plays in this Airport's future operations will have a significant impact on the Region's Airport System. If the master planning study will determine (as it is expected), this role will continue much as it is today, then the remainder of the airport system will have to absorb more of the increase in itinerant corporate activity. Also, the rest of the system will have to absorb virtually all of the increase in the Chicago area based corporate and business activity. Of course, this means that the general aviation reliever airports will become all-important in terms of enabling Chicago-O'Hare International to expand its air carrier activity capacity without discriminating against the corporate/business aviation segments. Obviously, these future development considerations at

Chicago-O'Hare International affect the entire system and not just those in the West Study Area. These impacts are discussed specifically in the North, the Chicago Central Area, and South Study Area reports.

DuPage County.

As has already been pointed out, this airport facility is presently one of the key general aviation reliever facilities in the Region. DuPage Airport must continue in this role for the region's airport system to continue to provide basic air transportation services in an efficient manner. Current airport improvement projects such as the installation of an ILS and lengthening of the east-west runway to 5,000 feet are important to furthering the airport's capability. Other future improvements are expected to be made in the following areas:

- A. Noise abatement and related efforts to achieve compatible land use zoning;
- B. Runway widening;
- C. Aircraft parking, including a larger itinerant ramp;
- D. Auto parking and airport entrance road improvements; and,
- E. Further study of airfield improvements including airfield expansion possibilities.

It is now unclear what the future expansion possibilities of the airport are outside its present boundaries. This has been a highly volatile political issue in DuPage and Kane Counties. What is obvious to airport system planners is that if DuPage is not allowed to expand to include another corporate/business jet runway, then there will be serious repercussions in the rest of the airport system, especially in the West Study Area. It is expected that an FAA Airport Master Plan study will soon be requested for this airport. Such a study is highly recommended as a method of obtaining answers regarding alternatives for the future development of DuPage County Airport. If the Fox Valley Airport Authority is not able to assume control of the airport and the airport remains under county control, it is suggested that the master planning study investigate other means of involving Kane County area governmental units and citizens in the development of the airport. Perhaps, an airport authority consisting of major portions of both counties would be one alternative. Regardless of the outcome of such a master planning study, the 1995 Airport System Plan recognizes the critical importance of DuPage County Airport to the overall airport system. Because of its importance, the plan recommendations include the support of the expansion of runway, taxiway and ramp facilities within the existing airport boundaries in the very near future. Within five years it is proposed that the airport be expanded to include a second 5,000 foot runway for corporate/business aircraft use on a northwest/southeast alignment. Because of the concern to minimize any detrimental environmental impact associated with this proposal, it is further recommended that this runway be restricted to use by corporate and business aircraft that meet Federal Aviation Regulation Part 36 noise certification standards and weigh no more than 62,000 pounds maximum gross weight (Grumman Gulfstream II).

Elgin Airport.

The map, Figure I.1, page 2, shown in the Introduction refers to two Elgin Airports. This deserves some explanation. The existing Elgin Airport is shown as a triangle (privately owned, public use airport) and a possible replacement airport is shown by a large circle (Public ILS airport) to the west of Elgin. This is an "either-or" site situation. An FAA-funded airport feasibility and site selection study began in mid-1974 to study the possibility of a publicly owned Elgin Airport. This study, unlike the Aurora Municipal Airport Master Plan Study, is not being entered into merely to examine the present airport site. It also will include an analysis of possible alternative locations for an Elgin Airport. This is being done because, in this case, the existing airport is somewhat limited in terms of its expansion possibilities and quick action will have to be taken to establish an instrument runway at its present location. As a result, the study may recommend a new site at the best place to provide a Public ILS airport for Elgin.

Regardless of the location of the airport, there are several development considerations that must be taken into account for a publicly owned airport to serve Elgin:

- A. It must have a long runway. DuPage and Pal-Waukee Airports are the next closest airports with long runways and both have capacity and local opposition problems;
- B. It shall eventually have an ILS system on its long runway;
- C. It must have the capability to serve business aircraft activity in an environmentally sound manner. This would include working toward compatible land use zoning around the airport; and,
- D. It must be able to handle some of the overflow of based aircraft from DuPage County Airport, if that airport is not able to expand, and from the troubled North Study Area Airports (Chicagoland and Pal-Waukee) if they are forced to close or are unable to meet future demand. Of course, on top of this overflow, an Elgin Airport must also be able to meet the based aircraft demand from its existing local service area.

It must be clearly stated that an Elgin-area Public ILS airport is key to the overall integrity of the 1995 Airport System Plan. This means that, at a minimum, the existing privately owned airport should be converted to public ownership and expanded. The existing site still has some expansion possibilities and, of course, is in an advantageous position access-wise because of its Tollway/Route 31 location. A new site would offer the advantage of not being constrained in terms of physical plant layout. Also, a new site would have a greater potential to develop in an environmentally sound manner. At either location, the Elgin Airport will be in a good position to serve northern Kane County while the existing site would best serve

northwest DuPage and west/northwest Cook Counties. In this case the 1995 Airport System Plan recommends a publicly owned airport with ILS capabilities for Elgin, but leaves the final site location open. The map shows a suggested location west of the city because, considering IFR radar airspace requirements, the existing site may have difficulty accommodating an instrumental runway without conflicting with instrumented runways existing at other airports.

Schaumburg Airport.

This airport, as with Elgin Airport, is the subject of an FAA-funded airport master planning study through a local municipality (in this case, the village of Schaumburg). It also is presently a privately owned airport with limited expansion capabilities at the present site. Therefore, other new sites will be examined in the study. The following considerations are important in a Schaumburg Airport Master Plan Study:

- A. Airspace is crucial here because of the airport's proximity to Chicago-O'Hare International. Any proposal for an IFR approach or an ILS will have to be carefully screened. At present, only public VFR status is recommended for this airport;
- B. The type of public ownership - authority or individual municipality - will have to be carefully considered since an airport in this area serves more than just the village of Schaumburg.
- C. The reduction of potential environmental impacts must be an important objective of any airport study for this area. This is especially important because Schaumburg is in a rapidly growing part of the region;
- D. Finally, the enlargement of aircraft basing capability will be important to the economic success of this airport. Present hangar and ramp space falls considerably short of what is and will be needed.

Schaumburg Airport, while not envisioned to ever be one of the major airports in the region, is nonetheless important to providing effective region-wide aviation services through the 1995 Airport System Plan. Even though development proposals for the airport will have to be formulated with extreme care, its geographical location ensures that it will continue to have an abundant market to serve both in the business and personal flying areas. The 1995 Airport System Plan therefore recommends public ownership for a Schaumburg Airport and that it retain its present VFR - only status.

New West Airport.

This airport is proposed for construction in west central Kane County. The reasons for this proposal are:

- A. The potential failing of DeKalb Municipal Airport just across the Kane/DeKalb County Line.
- B. The potential establishment of a "new town" near Elburn;

C. The potential crowding of aviation facilities farther east in the Region.

As noted previously, this airport is to be a Public VFR facility capable of serving the smaller corporate aircraft as needed. Its role would have to be flexible, however, depending upon what happens in the rest of the airport system in the West Study Area. For example, if a publicly owned airport for Elgin does not materialize, then the service role for this New West Airport might have to be expanded considerably. In any case, this is an airport of a long-term development nature. Its best chance for construction appear to be if developed concurrently with the New Town and can obtain zoning approval from Kane County authorities for the airport site. The 1995 Airport System Plan, therefore, recommends consideration of a publicly owned, (VFR only), airport in west central Kane County depending upon the long-term development considerations in that portion of the West Study Area.

Privately Owned Commercial Airports and RLA's.

It is recommended that all existing RLA sites be carefully reviewed regarding potential conflicts with existing or proposed public-use, commercially certificated airports. This is in particular reference to airspace usage conflicts that might have arisen since the original certificates were granted. While no new RLA or privately owned commercial airport sites are proposed in this plan, the continued presence of existing sites is recognized as long as there are no conflicts between such facilities and those Public ILS/VFR facilities proposed in this plan. Because of the potential problems that any new RLA or privately owned commercial sites may give the implementation of this plan, and because of the potential problems that may exist along the Kane/McHenry County line among present RLA's, a review procedure for such sites must be set up between the Illinois Department of Transportation Division of Aeronautics, the FAA and the regional planning agencies.

IMPLEMENTATION OF THE WEST STUDY AREA RECOMMENDATIONS-A PRIORITY STATEMENT

The all important first step in implementing any airport system plan is to follow up the system plan recommendations with individual airport master plans. This step has already been or is about to be taken on four of the airports in the West Study Area (Aurora Municipal, Chicago-O'Hare International, Elgin and Schaumburg). This also means that all but one of the existing public-use airports in this study area will be under careful scrutiny as to their future operational roles over the next two or three years. Only a study of DuPage County Airport is necessary to complete this individual airport analysis of existing or proposed replacement facilities. No other study area is this fortunate and no other study area in the region has a better chance to have most of the 1995 Airport System Plan recommendations implemented.

In terms of "plan flexibility", it is clear that each of the master plans must be monitored and the outcome of each carefully studied. Future updates and revisions of the 1995 Airport System Plan can then be made based upon the results of the master plans. The role of the New West Airport will be much easier to project at a future date.

As for general priorities in the West Study Area, it is clear that the completion of the on-going and proposed master plan studies for existing airports (particularly the privately owned ones, Elgin and Schaumburg) is the first priority. In terms of capital improvements in the air carrier sector (the Airport and Airways Development Act of 1970 identifies different "pots of money" for air carrier and general aviation airports), Chicago-O'Hare International improvement needs are the first and only priority in the West Study Area. These improvements will include the reconstruction of the 9L-27R and 4L-22R runways in the very near future.

In the longer term there will be access improvements, taxiway and runway improvements and terminal building projects to consider. In the general aviation area, the three Public ILS airports have about equal importance. However, in the short run, it is necessary to assure that Elgin will, indeed, become a Public ILS facility. Thus, it is named as the first of the Public ILS general aviation priorities, followed by DuPage County and Aurora Municipal (on an equal basis). It is also necessary to assure that DuPage County and Aurora Municipal remain at least the kind of airports they are today. Schaumburg's conversion to a Public VFR facility follows the Public ILS category in terms of importance, with the New West Airport site last in terms of West Study Area airport development priorities.

¹This discussion is drawn primarily from the U.S. Department of Commerce, 1970 Census of Population: Number of Inhabitants (Illinois), August 1971, pp. 15-20 to 15-39.

²David A. NewMyer, Loc. Cit.

³U.S. Department of Transportation, Federal Aviation Administration, FAA Air Traffic Activity, Fiscal Year 1973. pp. 91-99.

⁴Other Study Area chapters, particularly the North Study Area, also deal with Chicago-O'Hare International's assumed role.

⁵FAA, Office of Aviation Economics, Aviation Forecast Division, Terminal Area Forecast 1974-84 (Washington, D.C.: DOT/FAA, AFC-200, Oct. 1972). pp. GL 4 to GL 18. Actually the 1975-85 Forecast was also available, but did not cover as many airports in the Chicago area.

PART V. THE SOUTH STUDY AREA

DESCRIPTION OF THE STUDY AREA

This study area consists of southwest and southern Cook County and entire Will County. On the north it is bounded by the Chicago Central Area (CCA). Its boundaries follow the Stevenson Expressway (I-55) southwest to the Cook/DuPage County line near Burr Ridge. From there it follows the Cook/DuPage line to the intersection with the Will County line near Woodridge. From Woodridge it follows the Will County line all the way to the Indiana state line, then north to the Cook County line to the Lake Michigan shoreline. Finally, it follows the shoreline north to the CCA.

DEMOGRAPHIC CHARACTERISTICS¹

This study area covers a diverse area of the region. It includes an intensely urbanized portion of the city of Chicago as well as some of the most industrialized portions of the city. It includes Lake Calumet and Wolf Lake. It includes the booming areas around Bolingbrook and Park Forest South and also the quieter towns and villages in southern Will County, e.g., Elwood, Symerton and Braidwood. And, finally, near the latter, it includes the expansive Joliet Army Ammunitions Plant.

In terms of recent growth, this study area has had a diverse experience. Taking the northwestern portions first, it has already been noted that development in the Bolingbrook area is booming. This will soon be true of all of that portion of Will County bordering on DuPage County in the Naperville/Aurora area. In fact, the Fox Valley East Development just north of the DuPage/Will County line has recently been annexed to the city of Aurora. This will probably help accelerate growth in the area. Moving east into the southwestern Cook County, communities such as Lemont and Palos Heights have experienced recent surges in population, but are still relatively small in overall size. This part of Cook County still contains some large open areas. The remaining part of Cook County in the South Study Area is dominated by the city of Chicago and the "South Suburban" area, which includes: Calumet, Lansing, Country Club Estates and Park Forest. The city of Chicago can be characterized as already extensively developed, while the South Suburban area is only recently developed, having some open area remaining.

The growth that has already hit the South Suburban area is still largely in the future for eastern Will County. Some of the older, staid villages of east-central Will County have (like Lemont in Cook County), experienced a large population influx in recent years, but still remain in the small (3,000 to 6,000) population category. Southern Will County is fairly wide-open country all along its Kankakee County border. To the west, Joliet's population increased a modest 20 percent from 1960 to 1970.² Of course, there is evidence of scattered development, but suburban "sprawl" has definitely remained far to the north.

From an airport planning point of view, the development of this study area to date has not been as discouraging as in other parts of the region. To be sure, with the possible exception of Chicago-Hammond, little can be done to expand the airports now in existence in the Cook County portion of the area without some effect upon residential development. However, there is a great deal that can be done in Will County. This fact has been recognized in previously accomplished airport planning studies that were focused on the Third Airport Issue.³ However, there is even more promise in Will County for properly-located general aviation reliever airport facilities. And, if planned properly, such facilities can be provided without impinging upon any potential Third Airport sites.

THE CURRENT AIRPORT SYSTEM

Table V-1 lists the airport facilities now present in the South Study Area. Of the 11 public-use airports in the area, only one is capable of handling a full range of corporate/business aircraft types (Chicago-Midway). The remaining ten airports have main runways between 2,400 and 3,600 feet in length, thus classifying them as "Basic Utility" airports in FAA terminology. In general terms, this means that they can handle most aircraft types up to a light turboprop type of aircraft.

In addition to the 11 public-use airports in the region there are also 22 private use RLA's. These are also listed in Table V-1. These facilities are scattered throughout the study area and perform various functions. Generally, however, RLA operators offer fairly limited aviation support facilities and, by law, cannot allow any commercial operations such as flight training or charter work to exist on their premises.

The airport system in the South Study Area faces several problems, one of which is airport ownership. Of the 11 public-use airports in the area, only two are publicly owned. These are Chicago-Midway and Joliet Municipal. Technically, these are the only airports eligible for federal aid projects under present laws, with Joliet Municipal receiving no recent dollars because of a lack of forthright local agency support. The remaining nine airports are not eligible for public funds for expansion. Thus, the privately owned portion of the system must depend on the market conditions to pay for airport expansions as well as to keep ahead of the tax situation.

Airport closings are another problem, although there have been no recent closings of public-use airports in the study area of any consequence. Plainfield-George airport closed in 1969 with the operation moving to another site as an RLA, or private-use landing strip. Fromm (Channahon) and Wings Field (Park Forest South) closed to public use in the early 1970's but remain in use as private use airfields. In all, perhaps 25 or 30 aircraft and about 100 pilots were affected by the closings.⁴

The major problem in this study area, really, is not the past closings, but, rather, future potential closings. Joliet Municipal Airport is an example of an existing airport in trouble. Its present local government sponsor, the Joliet Park District, wants to get out of the airport business. It

has given the present operator until fiscal year 1976 before closing the field. Since a replacement airport has not been programmed on the local, state or federal level, a net loss of one public-use airport appears imminent. Wilhelmi may also be near closure but, in this case, because of the recent death of its owner-operator, Herman Wilhelmi. Crestwood-Howell Airport is now virtually surrounded by suburban sprawl development. None of the communities in the area appear interested in the airport. As a result, the airport will probably close when the operator decides that it is no longer profitable to operate there. In this case, the operator already owns another airport site in New Lenox and can move his operation there. Finally, Gear Airport (New Lenox) will apparently soon close its doors to public-use and become an RLA. In all, these four potential closures will affect an estimated 209 based aircraft and upwards of 325 pilot-users.⁵ Concern about these closures and the ability to meet future aviation demands in the area greatly affected the resulting 1995 Airport System Plan recommendations for the study area.

Another major problem in the South Study Area are land development pressures. This problem was, of course, alluded to in the previous sections on airport closings. Nearly every airport in the area, with the possible exception of Sanger Airport in Monee, faces this problem to some degree. The airports with the worst problems are Chicago-Midway and Crestwood-Howell. These two airports are completely surrounded by either residential development, or are bordered by highways, to the point where further expansion is out of the question. Also, the nearby residential areas imply an aircraft overflight problem, particularly at Chicago-Midway which serves considerable jet traffic. Frankfort, Clow International and Chicago-Hammond Airports face a similar situation in that there is presently residential development near or adjacent to the airport, but there is still some room for expansion or buffer areas if reasonably quick action can be taken. Wilhelmi Airport located on Route 53 south of Joliet, faces a similar situation with development creeping south along 53. However, it is not expected that the airport will continue operation much longer so further acquisition for protection is probably out of the question. Joliet Municipal has a terrain problem in terms of expansion of its existing site to the east or south. Expansion north or west is prohibited by a major arterial highway and commercial development, respectively. Lewis-Lockport Airport can really only expand to the west because of adjacent development to the north (residential), east (Lewis University) and south (industrial). Expansion to the west will require the relocation or closure of a minor arterial street, but discussions have already begun on this subject between the county and airport officials. New Lenox-Howell, one of the most recently established (1968) public-use airports in the northeastern Illinois area, faces the problem of residential development to the west and south. While the problem is not as bad as near Clow International, for example, it is a case where the airport operator should acquire as much land as possible now to insure compatibility in the absence of zoning. Gear Airport is soon to become an RLA. In this case, there is sufficient land to the west and south for expansion, if the owner deems it necessary for his RLA operation. However, residential development lies immediately north of the airport and fairly close to the eastern boundary of the field, thus making expansion possibilities in those directions limited.

TABLE V-1
South Study Area Existing Airports and RLA's

PUBLIC USE AIRPORTS

	<u>Name</u>	<u>Associated City</u>	<u>Ownership</u>	<u>Runways Number</u>	<u>Longest¹</u>	<u>Estimated Based Aircraft Number²</u>
1.	Chicago-Midway	Chicago	Public	4	6,520	304
2.	Howell-Crestwood	Crestwood	Private	4	3,500	100
3.	Chicago-Hammond	Lansing	Private	3	2,650	100
4.	Sanger	Monee	Private	2	2,400	78
5.	Frankfort	Frankfort	Private	1	3,175	90
6.	New Lenox-Howell	New Lenox	Private	1	3,600	10
7.	Gear	New Lenox	Private	1	3,150	20
8.	Lewis-Lockport	Lockport	Private	2	3,250	221
9.	Clow International	Plainfield	Private	1	3,370	93
10.	Joliet Municipal	Joliet	Public	2	2,980	80
11.	Wilhelmi	Joliet	Private	1	2,640 (T)	9
PUBLIC-USE SUBTOTAL						1,005

RESTRICTED LANDING AREAS (All Privately Owned)

12.	Sparks Brothers	Chicago Heights	Private	1	2,000	2
13.	Mall Tool	Crete	-	2	3,400	2
14.	Von Alven's Airview	Beecher	-	1	1,827	1
15.	Viall-Homestead	Mantero	-	1	1,750	0
16.	Johnson	Manhattan	-	1	1,900	3
17.	Schmidt	Manhattan	-	1	2,250	0
18.	Sweedler	Manhattan	-	1	2,227	0
19.	Greer Tech. Inst.	Braidwood	-	1	3,800	0
20.	Chicago Glider Club	Channahon	-	1	1,885	0

21.	Martin (Aero Four)	Channahon	-	1	1,675	1
22.	Powers	Plainfield	-	1	1,821	0
23.	Day	Plainfield	-	1	2,344	1
24.	George	Plainfield	-	1	2,316	15
25.	Lambert	Plainfield	-	1	2,261	14
26.	Meyer Material	Plainfield	-	1	1,884	0
27.	Matter Field	Plainfield	-	1	1,800	0
28.	Haedtler Field	Park Forest	-	2	2,087	5
29.	Fromm	Channahon	-	1	2,741	0
30.	Brandt	Manteno	-	1	1,440	0
31.	Great Midwest					
	Rotorcraft Club	Custer Park	-	1	1,900	0
32.	Fitzpatrick	Custer Park	-	1	2,000	0
33.	Underwood	Custer Park	-	1	2,075	0
				RLA SUBTOTAL		47
				GRAND TOTAL		1,052

¹"Longest Runway" indicated for Public-Use Airports in this table is the longest hard surfaced runway unless all runways are turf (indicated with "T"). For Restricted Landing Areas, runway surface not considered.

²Based aircraft estimates are from the Chicago Area Transportation Study Airport Facilities Questionnaire.

RLA based aircraft figures have been estimated by CATS using federal and state records and field inspections where possible.

SOURCE: Division of Aeronautics, Illinois Department of Transportation;
Airports District Office of the FAA, Great Lakes Region;
Chicago Area Transportation Study field inspections and surveys.

CURRENT AVIATION ACTIVITY

Aircraft operations are a key measure of airport activity. Fiscal year 1972 operations estimates are shown in Table V-2.

TABLE V-2

Current Activity South Study Area Airport Operations Estimates (Fiscal Year 1972)

AIRPORT	LOCAL	ITINERANT	TOTAL
Chicago-Midway ¹	25,000	174,000	199,000
Crestwood-Howell ²	50,000	21,000	71,000
Chicago-Hammond ²	44,000	20,000	64,000
Sanger ²	28,000	12,000	40,000
Frankfort ²	41,000	17,000	58,000
New Lenox-Howell ³	7,000	2,000	9,000
Gear ³	9,000	4,000	13,000
Lewis-Lockport ²	50,000	19,000	69,000
Clow International ⁴	35,000	15,000	50,000
Joliet Municipal ²	36,000	48,000	84,000
Wilhelmi ³	4,000	2,000	6,000
	329,000	334,000	663,000

SOURCES:

¹ FAA Tower Count, rounded.

² FAA Terminal Area Forecast 1974-1984, October 1972.

³ FAA 5010 Airport Master Record Forms.

⁴ CATS estimate based on airports of a comparable configuration.

Interpreting these operations figures requires some knowledge of the difference between local and itinerant operations. Local operations are generally training operations that often take place in sight of the airport. Itinerant operations can also be training operations but, more commonly, these operations are for the purpose of traveling to another city or town for business, government or personal reasons. In the South Study Area as a whole, the operations estimates (as reflected in Table V-2) show close to a 50-50 split between local and itinerant operations. In looking at the figures more closely, it can be seen that the area-wide result stems from a heavily itinerant-oriented figure at Chicago-Midway Airport. In fact the figures show that it was the 22nd busiest airport in the country from the standpoint of general aviation itinerant operations in FY 1973.⁶ This trend toward total itinerant operations at Chicago-Midway will most likely continue because of the fact that this facility serves as the primary reliever to Chicago-O'Hare International for all kinds of activity.

It is clear that there is no real alternative to Chicago-Midway's long runways and ILS's in all of the South Study Area. However, when the city of Chicago, the operator of Chicago-Midway, is finally successful in diverting significant air carrier activity from Chicago-O'Hare International to Chicago-Midway, the remaining local general aviation operations will probably be forced out along with some itinerant operations. When this happens, Gary Municipal Airport in northwestern Indiana will probably pick up some of

the traffic since it has a longer main runway than Chicago-Midway as well as an ILS. However, Gary Municipal really does not serve all of the South Study Area well, particularly the Joliet Municipal and Lewis-Lockport portion of the South Study Area.

The remaining airports in the South Study Area are presently heavily-oriented towards local operations. In fact, without Chicago-Midway in the picture, the local-itinerant ratio changes from 50-50 to 65.5 percent local and 34.5 percent itinerant. Changing this ratio in the South Study Area, even at only one airport will require that as a minimum, longer runways be provided. Of course, as itinerant operations increase at an airport, as they have at Chicago-Midway, a mix of single-engine piston and heavy turbo-prop or jet aircraft begins to bring on a safety problem. This safety problem either requires air traffic control (a tower) or a reasonable alternative airport site for training operations. In a sense, this is the role that Crestwood-Howell and Chicago-Hammond Airports have played so far in relation to Chicago-Midway. But, with the spectre of airport closings as well as increased general aviation diversions of all types from Chicago-Midway, there is some question as to where these operations will be handled.

As with the based aircraft figures, an estimate of an airport's capacity to handle aircraft operations is necessary in order to translate these numbers into airport planning information. Table V-3 presents total operations and capacity figures for each airport.

TABLE V-3

Present Operations Compared to Capacity South Study Area Airports

	<u>TOTAL FY 72 OPERATIONS</u> ¹	<u>CAPACITY (PANCAP)</u> ²
Chicago-Midway	199,000	327,000
Crestwood-Howell*	71,000	95,000
Chicago-Hammond	64,000	95,000
Sanger	40,000	112,000
Frankfort	58,000	100,000*
New Lenox-Howell	9,000	67,000
Gear	13,000	67,000*
Lewis-Lockport	69,000	155,000
Clow International	50,000	67,000*
Joliet Municipal**	84,000	65,000
Wilhelmi	6,000	60,000*
	<u>663,000</u>	<u>1,210,000</u>

¹ Various sources, see Table V-4.

² From Federal Aviation Forms 5090-2,3. "National Airport System Plan Entry Criteria Worksheets" Circa 1972.

* CATS estimate using FAA Advisory Circular 150/5060-3A Airport Capacity Criteria Used in Long-Range Planning, Dec. 1969.

** "Endangered Airports".

It is evident from the foregoing table that there is enough capacity at present to meet operations demand. However, as with the aircraft basing capacity information, the qualification has to be added that these operations capacity figures are not necessarily related to the types of aircraft being served. For example, in referring back to Table V-1, it can be observed that there are no runways available in the South Study Area, other than at Chicago-Midway, that are long enough to handle the full range of corporate and business turbine-powered aircraft.

AN ASSESSMENT OF AIRPORT NEEDS IN THE SOUTH STUDY AREA

In order to make as much sense as possible out of the airfield capacity question, future aircraft operations estimates should be compared to present capacity to identify any needed capacity expansion. Table V-4 presents this information.

TABLE V-4

South Study Area Activity Forecasts Compared to Present Airfield Capacity

Airport	Capacity ¹	TOTAL OPERATIONS
		FY 84 Forecast ²
Chicago-Midway	327,000	248,000
Crestwood-Howell	95,000	145,000
Chicago-Hammond	95,000	120,000
Sanger	112,000	76,000
Frankfort	100,000*	110,000
New Lenox-Howell	67,000	15,000*
Gear	67,000*	22,000*
Lewis-Lockport	155,000	122,000
Clow International	67,000*	82,000*
Joliet Municipal	65,000	154,000
Wilhelmi	60,000*	10,000*
	<u>1,210,000</u>	<u>1,104,000</u>

¹See Table V-5.

²Federal Aviation Administration, Terminal Area Forecast, 1974-1984, (Wash., D.C.: FAA, October 1972), pp. GL-4 to GL-18. This document did not contain forecasts for New Lenox-Howell, Gear, Clow-International or Wilhelmi Airports. These were derived by applying the FY 74-84 growth factor from the South Study Area airports included within the forecast to the FY 72 operations estimate contained in Table V-4 for each airport not included in the forecast.

*Estimated by CATS, not an FAA figure.

It should be made clear at the outset of the analysis that the forecasts used were not available for every airport and had to be expanded for use by CATS. Also, it should be noted that, in accepting the FAA forecasts, there are some individual airport situations that have to be ignored. For example, both Joliet Municipal and Crestwood-Howell have a good chance of closing by 1984. In the case of New Lenox-Howell, the closing Crestwood-Howell may involve the transfer of a significant amount of activity to the New Lenox facility. Thus, the figure shown for New Lenox-Howell may be significantly underestimated. It also should be pointed out that the figure for Joliet Municipal is significantly higher than the FAA figured

capacity (39,000 operations higher). Thus, it can be assumed that a new Joliet airport was assumed to be operational by 1984. In any case, there are limitations to the data and the ones indicated above and others have been taken into account in this exercise.

A final note should be made along these lines regarding the lack of forecast data to 1995. In examining Table V-4 it becomes clear that the problems within that part of the regional airport system in the South Study Area will become quite critical in the near future. The 1985 to 1995 period data are academic in the sense that, if nothing is done by 1980 to solve some of the individual airport situations, the changes in the system will make the later time-period data somewhat useless. Thus, while that data might be desirable it will not be crucial in determining what must be done to preserve an airport system through 1995.

A lot has been said with regard to the effect of airport closings on airport activity data. The following table attempts to summarize what will happen to the demand/capacity situation in the study area if the four previously-mentioned airports close. Therefore, if these airports close with no replacement facilities, some 16.4 percent of the forecasted FY 84 demand (181,000 operations) will either not be met by public-use facilities or will be transferred to RLA's in the area or airports outside the area.

TABLE V-5

The Effect of Airport Closings on the South Study Area Airport Capacity

	CAPACITY	FY 1984 FORECASTS
Present System	1,210,000 (67.6 Percent at Privately Owned)	1,104,000
Present System minus four* "endangered airports"	923,000 (64.6 Percent at Privately Owned)	1,104,000**

NOTE: 181,000 operations difference between estimated capacity and forecasted demand with the removal of the four airports.

*Crestwood-Howell, Joliet Municipal, Wilhelmi, and New Lenox-Howell

**This assumes, of course, that the present users of the four airports will not quit flying altogether or choose airports outside the South Study Area. It also drops New Lenox-Howell from the system; it will probably remain as an RLA. This omission of Gear must be done since that facility really is not going to meet the complete needs for airport facilities in that part of the South Study Area.

Comparing based aircraft figures to airport capacity figures provides another method of determining airport needs. Table V-6 presents this information. Of course, these numbers are not the whole picture. As noted in the table, four of the eleven airports are in danger of closing to public-use. If the aircraft now at those facilities relocated to the remaining airports

in the South Study Area, the remaining airports would have 60 percent of their capacity filled. Putting it another way, these closings would reduce aircraft basing capacity by 21 percent in the area.

TABLE V-6
South Study Area Airport Based Aircraft Capacity

AIRPORT	NUMBER OF AIRCRAFT	ESTIMATED CAPACITY	PERCENT FILLED
Chicago-Midway	304	350	86.7
Crestwood-Howell*	100	200	50.0
Chicago-Hammond	100	175	57.1
Sanger	78	250	31.2
Frankfort	90	200	45.0
New Lenox-Howell	10	200	5.0
Gear*	20	60	30.0
Lewis Lockport	221	300	73.7
Clow International	93	200	46.5
Joliet Municipal*	80	150	53.3
Wilhelmi*	9	50	18.0
TOTAL	1005	2135	47.1

*Airports that may close to public use. Without these airports, some 21.1 percent of the ultimate based aircraft capacity of the area would be lost. Also, 20.8 percent of the aircraft now in the South Study Area are at these airports and would have to be relocated.

SOURCE: CATS Airport Facilities Questionnaires and CATS estimates (current airport configuration).

A final criteria to be added to the airport needs statement for the South Study Area is whether or not the area's airports have adequate instrument capability. Table V-7 presents this information.

TABLE V-7
Instrument Capability - South Study Area Airports

	INSTRUMENT		
	Approach ?	Landing System ?	Control Tower ?
Chicago-Midway	Yes	Yes	Yes
Crestwood-Howell	No	No	No
Chicago-Hammond	Yes	No	No
Sanger	Yes	No	No
Frankfort	Yes	No	No
New Lenox-Howell	No	No	No
Gear	No	No	No
Lewis-Lockport	Yes	No	No
Clow International	Yes	No	No
Joliet Municipal	Yes	No	No
Wilhelmi	No	No	No

SOURCE: CATS' Airport Facilities Questionnaires; Airport Managers.

Instrument capability at an airport is important in making year-round, all weather service a possibility. An instrument approach provides this capability to a point, but an ILS is the most sophisticated way of providing this capability. An ILS also provides better guidance to the pilots in minimal weather conditions, usually allowing approaches to an airport under even lower visibility and ceiling conditions than with an instrument approach. As can be seen in Table V-7, only one airport presently has this full all weather capability and this is Chicago-Midway Airport. Thus, if extremely poor weather is present in the South Study Area, Chicago-Midway Airport is the only alternative within the area. Just outside the area, Gary Municipal, as pointed out previously has a partial ILS and, therefore, provides an alternative to those people bound for Chicago-Hammond and, perhaps, Frankfort and Crestwood-Howell destined trips. Thus, total airfield capacity within the South Study Area is extremely reduced in bad weather.

This tends to put the South Study Area airport situation into perspective in fairly brief terms: existing airfield and based aircraft capacity in the area seems sufficient to meet demand into the 1980's. However, with the imminent loss of Joliet Municipal Airport as well as three other public-use airports, more capacity will have to be provided (especially runway capacity). The loss of airports beyond the four already mentioned, which is possible (Chicago-Hammond and Clow International will soon be as pressured as Crestwood-Howell), will make the situation even more critical.

1995 REGIONAL AIRPORT SYSTEM PLAN RECOMMENDATIONS - SOUTH STUDY AREA

General

The 1995 Airport System Plan recommendations for the South Study Area call for one air carrier airport, one new airport serving general aviation (replacing an existing facility) and four conversions of existing privately-owned airports to public ownership. The following table summarizes what will happen by airport in the South Study Area.

TABLE V-8

South Study Area Recommendations 1995 Regional Airport System Plan (Not a Priority Ranking)

<u>AIRPORT</u>	<u>RECOMMENDATION</u>
1. Chicago-Midway	Air Carrier
2. Chicago-Hammond	Publicly-Owned, Visual Flight Rules
3. Clow International	Publicly-Owned, Visual Flight Rules
4. Frankfort	Publicly-Owned, Visual Flight Rules
5. New Joliet	Publicly-Owned, Visual Flight Rules (Replacement for Joliet Municipal)
6. Joliet Municipal	To be closed and replaced
7. Lewis-Lockport	Publicly Owned, Instrument Landing System
8. Crestwood-Howell	Remain Privately-Owned
9. Gear	Remain Privately-Owned
10. New Lenox-Howell	Remain Privately-Owned
11. Sanger	Remain Privately-Owned
12. Wilhelmi	Remain Privately-Owned
13. Privately Owned, Public- Use Airports and RLA's	No new sites are recommended

In order to further describe the preceding plan recommendations for the South Study Area, a summary of what the recommendations will mean for each airport is provided in the following pages. One of the important purposes of this section of the report is to define further the justifications for the plan proposals as well as to present some of the "flexibilities" of the proposals.

Chicago-Midway

One of the key airports in the midwest, as well as within the Chicago-Northwestern Indiana Region, Chicago-Midway is proposed to become more heavily utilized by the scheduled domestic airlines in the near future. This increased airline activity has, in fact, been the subject of a recently released study sponsored by the FAA, entitled Chicago Midway Airport Study.⁷ The study was prepared under the direction of the FAA's now defunct Quiet Short Haul Air Transportation Office. The overall objectives of the study were: to determine the capacity needs of the Chicago Air Transportation System; to identify which of the needs Chicago-Midway was most suitable to fulfill; and finally, to make recommendations as to what to do with it in the future.⁸ The study was directed primarily at the possibility (and problems) of shifting a large amount of airline traffic from Chicago-O'Hare International to Chicago-Midway. The method selected for doing this was to focus on 16 high density short haul routes now being served at the former. Two alternatives for shifting flights were explored: one designed for achieving moderate airline traffic growth at Chicago-Midway and the other directed at achieving accelerated airline traffic growth there. The results of these alternatives in terms of Chicago-Midway's annual aircraft operations by the mid-1980's were shown to be 245,000 for the moderate growth plan and 312,000 for the accelerated growth plan. In either case, general aviation traffic (local and itinerant) was shown to be 148,000 operations.⁹

While the Chicago-Midway Study was not available during the preparation of the 1995 Airport System Plan, its findings generally support the research and proposals contained within the regional plan. This is especially true with regard to the share of the airport's capacity forecasted for general aviation within the Chicago-Midway study. Earlier in this report it was stated that it was the 22nd busiest general aviation itinerant airport in the nation. But it did not state the even more critical point that it is presently the busiest general aviation itinerant airport in the State of Illinois, and therefore, in the northeastern Illinois area. Thus, it is clear that without some general aviation relief there, the accelerated growth alternative presented in the Chicago-Midway Study will be difficult to achieve.

Chicago-Midway's future, then, remains very volatile. The 1995 Plan recommendations and the FAA's Chicago-Midway Study make the assumption that Chicago-O'Hare International delays will finally become unacceptable enough to convince the airlines to make the Chicago-Midway shift. However, a specific timetable for the shift is unclear. Unless air travel falls to incredibly low levels, the shift will probably take place sometime within the next five years. There is very little flexibility in what the result of this shift will be: a very real and long lasting impact upon general aviation operations at Chicago-Midway and in the Chicago Region.

In order to achieve this new air carrier role, improvements are necessary at Chicago-Midway. They include:

1. Obstruction removal;
2. Increased runway instrumentation;
3. Noise abatement;
4. Improved ground access;
5. Increased automobile parking; and,
6. Zoning of the surrounding area (for height restriction and, where possible, compatible land uses).

These and other improvement items will be the subject of a detailed airport master planning study to be sponsored by the city of Chicago and funded through the FAA. Whatever the city finally decides to do with Chicago-Midway will have an impact on the rest of the region's airport system. Thus, depending on the outcome of this master planning study, adjustments may have to be made in the assumptions and data upon which the regional plan is based. Finally, it should again be pointed out that, without alternative general aviation airports with instrument landing capability, a significant shift of airline operations to Chicago-Midway will most likely result in significant delays to all users of this airport. The 1995 Plan proposes such alternatives at Chicago-Meigs (by instrumenting the existing runway) and at Lewis-Lockport Airport, by constructing and instrumenting a new runway.

Lewis-Lockport

This airport, of all the existing airports now serving general aviation in the South Study Area, has the best chance of becoming the long-runway airport so desperately needed in the area in the near future. Its potential is high because, even though it is privately owned, it has good backing through Lewis University, (Catholic Church sponsored) that owns the airport. It has the land necessary for such a new role. However, the purchase of the land and, as mentioned previously, the relocation or closure of a small street are actions that must be taken soon to make this proposal a fact.

Presently, Lewis-Lockport Airport serves as an important general aviation reliever in the South Study Area. In fact, it has the second largest number of based aircraft (221) in the area and the fourth largest in the entire Chicago-Northwestern Indiana Region (behind DuPage County, Chicago-Midway, and Pal-Waukee). It should be noted that Lewis-Lockport experienced some recent growth in based aircraft due to the closure of Hinsdale Airport in mid-1973.

The 1995 Plan proposes Lewis-Lockport Airport to become a publicly owned, ILS alternative airport in the South Study Area. This proposal is made with the full recognition of the problems of: first, obtaining a public sponsor and, second, coming to terms with Lewis University for the purchase of the airport. However, the University presently seems to have a long-term commitment to the airport. This is an important benefit in that the airport will most likely continue to be improved regardless of public agency backing. This is illustrated by the fact that the University just supported a recent overlay of its 3,250 foot east-west runway.

Even with the short-term assurance of a good private sponsor, the long-term questions of what will happen around the airport from a land-use standpoint suggest that there must be some flexibility in the plan regarding the provision of a Public ILS facility for the South Study Area. Inasmuch as a system plan can only identify a general area of need, the 1995 plan recommendation must be flexible in order to meet that need. Thus, it is possible that if public sponsorship does not develop for Lewis-Lockport and, if land use problems make land acquisition for a new runway impossible, then a new Joliet Airport could take on the role envisioned for Lewis-Lockport. Obviously the most sensible way to solve the problem might be to combine the effort to find a Joliet area airport with the advantages inherent in improving an existing airport, versus building an all new airport, to serve the Joliet area's aviation needs. The 1995 Plan, however, suggests that there is demand to justify two facilities, as well as the air and ground space for two facilities. So, the most likely alternative to what is shown on the plan map will probably be a new Joliet Public ILS airport combined with a Lewis-Lockport Public VFR airport. This question of which site, or sites, should be maintained in the long run is a proper one to be addressed in an airport master planning study.

The details of the plan recommendation for Lewis-Lockport call for the following items to be accomplished to improve the airport:

1. Public sponsorship and the accompanying master planning and environmental studies;
2. Acquisition of land for a new runway with adequate (34:1) clear zones;
3. Construct, instrument, light, and provide height restriction/compatible land-use zoning for a new 5,400 foot runway;
4. Provide more based aircraft parking capacity, particularly more hangar space for corporate and business aircraft; and,
5. An air traffic control tower should be considered at Lewis-Lockport as traffic continues to build into the 1980's.

In accomplishing this, the eventual public sponsor must work carefully with Lewis University. It is suggested that the University remain as a major fixed base operator on the field and that officials of the University sit on the airport board of the sponsoring public agency. Such a role for the University can be guided in its formative stages by the already-existing relationship of other Universities to publicly owned airports (Champaign University of Illinois - Willard Airport and Southern Illinois Airport).

Joliet Municipal Airport.

Much of what will actually happen in the South Study Area airport situation in the near future depends greatly upon how the Joliet Municipal airport closure evolves. At present, the closure is scheduled for FY 1976, although it is not clear if this means the beginning or end of that period. Up to this point, no clear replacement has emerged for the Joliet Park

District as the sponsor of the potential replacement for the existing airport. (This lack of sponsorship being another reason for the reliance upon Lewis-Lockport Airport within the plan.) Without the sponsor, a public owned replacement for the existing airport will not be possible by the announced closure period. And, even if a sponsor emerges, it is very doubtful that an airport could be constructed by the end of FY 76.

However, the short-term lack of sponsorship does not eradicate the longer term need for more airport capacity in the Joliet Area. As pointed out in Table V-3, Lewis-Lockport's based aircraft capacity is 73.7 percent filled today. Furthermore, with the expected closure of both Joliet Municipal and Wilhelmi, a total of 164,000 forecasted FY 84 aircraft operations (see Table V-7) will be seeking other airports. Lewis-Lockport is one very logical alternative airport. However, with its own forecasted FY 84 operations level of 122,000 operations, room for only 33,000 operations theoretically remain within the ultimate capacity of the existing airport configuration.

Thus, with a demonstrated need in the area, there must be a logical way to serve it. The plan recommends the construction of a New Joliet (Publicly-Owned Visual Flight Rules) Airport, to the west, southwest or south of the city of Joliet. The Plan map shows it at a location due west of Joliet near Shorewood. Actually, there are other, possibly more feasible, sites to the south of Joliet. This would include the possibility of using a portion of the Joliet Army Ammunition Plant, if such land ever is declared excess by the U.S. Army.

When the New Joliet Airport is built, it should include the following characteristics:

1. The site should be properly located within the comprehensive land use plans of the city of Joliet, Will County and any other agencies it may effect. It should also be protected from encroaching residential or commercial land uses through height restriction and compatible land use zoning;
2. It should have a minimum of a 3,800 foot main runway with crosswind runway;
3. While primarily a VFR airport, an instrument approach should be considered to the main runway; and,
4. It should have the ultimate capability of basing a minimum of 300 aircraft with, perhaps, one-half of this number in hangars or T-Hangars.

The previously mentioned "plan flexibilities" designated in the Lewis-Lockport section of this report also apply to the new Joliet Airport recommendations. In other words, by virtue of residential development and a lack of public sponsorship at Lewis-Lockport, the new Joliet facility may have to become the key general aviation reliever airport in the South Study Area. This, as noted previously, will be an important subject for discussion in an airport master planning study directed at answering the Joliet Municipal replacement question.

Frankfort Airport

Frankfort's role in the plan is to continue operations as previous, but with an expanded runway/taxiway configuration to add more operations capacity to the present airport. In terms of airport services, it is located in such a way as to serve the central portions of Will County as well as some of the southern portions of Cook County. This airport, for example, will probably pick up a fair amount of activity from the Crestwood-Howell facility if it were ever to close.

The plan calls for a publicly owned, visual flight rules airport. Again, the VFR category is intended to identify an airport's predominant use. An instrument approach procedure exists for the present airport and this capability will no doubt continue if the airport goes to public ownership. Other characteristics of the airport as visualized in the plan are:

1. Public Sponsorship;
2. Height restriction and compatible land-use zoning;
3. A minimum 3,800 foot main runway;
4. Land acquisition for a new northeast-southwest crosswind runway and parallel taxiway; and
5. Increased aircraft parking capacity and servicing capability, including more hangar space.

Of course, as with the other recommendations for South Study Area airports, there are flexibilities built into the Frankfort proposal. There is need for an airport demonstrated in this part of the area. The present Frankfort site was selected as the best location for the 1995 recommendation because it seemed to have the best potential for short-term survival as a privately owned airport. It also seemed to have good potential for expansion. However, it would be logical for the eventual public sponsor of this airport to examine alternative airport sites including all-new and other existing sites. Since this report contains system plan (general site area) recommendations, such a study of alternatives would not only be consistent with the plan, it would probably be essential in order to fulfill the plan recommendations.

Clow International

Located in the northwestern portion of the South Study Area, Clow International, even more than Lewis-Lockport, is located in such a way as to serve demand within as well as outside the South Study Area. It is also located in a rapidly developing portion of northeastern Illinois. So, reasonably quick action will be needed to retain this airport for future use.

As envisioned in the 1995 Plan, Clow International is to have the following operational characteristics:

1. Public sponsorship;
2. A 3,800 foot main runway with a parallel taxiway;
3. A paved ramp/service area;
4. Increased aircraft parking area, especially more hangar space;

5. If possible, land acquisition for, and construction of, a crosswind runway; and
6. Compatible land use and height restriction zoning; particularly off of the runway ends.

The plan flexibilities for Clow International include the possibility of moving this airport operation to a new site. This might have to be considered for a sponsoring agency in that the existing site may be surrounded by extant and proposed development, that it may be impossible to acquire land for a crosswind runway. Without a crosswind runway, it is difficult to operate single engine and light twin aircraft under strong east-west wind conditions at this airport. Another consideration for a new site is that 3,370 feet is probably all the length that can be developed for the main runway within the existing property lines. As noted for other airports, all of these considerations, and more, would be discussed within an airport master planning study if a logical sponsor could be found.

Chicago-Hammond

This is the final recommended publicly owned airport for the South Study Area. As noted on the plan map, Chicago-Hammond is proposed to be a Public VFR airport, not unlike Frankfort and Clow International. It is presently a privately owned airport and is located in extreme southeastern Cook County near the Illinois/Indiana State line. Like Clow International, its most immediate problem is land development pressures.

The 1995 Airport System Plan recommendation for Chicago-Hammond Airport characterizes its needs like this:

1. Public sponsorship;
2. Compatible land use/height restriction zoning in runway approach areas;
3. Land acquisition for (if necessary), and construction of, a paved crosswind runway;
4. Land acquisition for, and construction of, an extension to the east/west runway; and,
5. More aircraft parking area.

At present, there appears to be little flexibility to the recommendation for acquisition of this airport. Alternate sites to the north and west are not possible because of development. To the east, there is a state line to contend with. To the south, there may be problems of traffic pattern airspace conflicts with the existing Sanger Airport. Thus, fast action on the purchase of this airport will be necessary in order to assure some operational flexibility at this site.

Existing Privately-Owned, Public-Use Airports

There are five airports on the 1995 Plan map for which no specific public action was recommended. These five are:

- A. Crestwood-Howell;
- B. Gear;

- C. New Lenox-Howell;
- D. Sanger; and,
- E. Wilhelmi.

Three of the five are mentioned repeatedly in earlier portions of the South Study Area report to be "in danger of closing to public-use". These are Crestwood-Howell, Gear and Wilhelmi. While there is a primary reason for not including them in the plan, there are other reasons. One overall reason is the fact that, there is a logical limit to the number of publicly owned airports that can be justifiably supported financially. Also, part of the justification is that there will be enough air space and ground space for all of the publicly-owned airports in a regional airport system to coexist in a compatible fashion. In this sense, the South Study Area presently contains more airports than can be justified for public expenditure. Thus, the above five were ruled out for the time being. It should be noted that changes in the situation may require reconsideration of this action in the future, particularly for New Lenox-Howell and, possibly for Sanger.

New Privately-Owned Public-Use Airports and Restricted Landing Areas

As noted for previous study areas, no new RLA or privately owned, public-use airport sites are proposed in the 1995 Airport System Plan. This action is recommended in that, from the airspace usage standpoint in particular, further airport sites will only complicate the present situation. This is not only true in terms of general aviation reliever airports, but is also the case for any potential third air carrier airport sites that may be located in the South Study Area. Thus, until a better review process can be set up between the Illinois Department of Transportation, Division of Aeronautics, the FAA, and the regional planning agencies, a moratorium on the construction of new privately owned RLA s or public-use airports is recommended. This moratorium would, of course, not be permanent nor would it jeopardize any actions which present airport/RLA operators wanted to take at their present sites. The above mentioned review process would merely request that the Division of Aeronautics submit pertinent data on any such proposals for privately owned new facilities in the six county area to the NIPC so that through its A-95 process, can determine the compatibility of these new facilities with the Regional Airport System Plan.

IMPLEMENTATION OF THE SOUTH STUDY AREA RECOMMENDATIONS - A PRIORITY STATEMENT

The first step in the implementation of these recommendations will be to develop adequate public sponsorship for each of the proposed publicly owned airports in the plan. Through these new sponsors, airport master planning studies should be initiated for each airport, or for a combination of airports. It should be noted that there has been interest shown by potential public sponsors in each of the publicly owned airports proposed in the South Study Area, including the new Joliet site. Also, the city of Chicago has made application to the FAA for a master plan study of Chicago-Midway Airport. Thus, there seems to be interest in the South Study Area airports in the plan, now it is a question of "follow-through".

In terms of specific priorities, the following is a proposed priority list for South Study Area airports:

- A. Air Carrier
 - 1. Chicago-Midway
- B. General Aviation Reliever Airports (both Public ILS and Public VFR)
 - 1. Lewis-Lockport, Public ILS;
 - 2. New Joliet, Public VFR;
 - 3. Chicago-Hammond, Public VFR;
 - 4. Frankfort, Public VFR; and
 - 5. Clow International, Public VFR.

It is further recommended that the Lewis and New Joliet facilities under one master planning grant or, if that is not possible, in some cooperative fashion. The need for some long runway, instrument landing capability for general aviation in a location other than Chicago-Midway is important. However, it is difficult to place this higher on the priority list than a replacement for the closing Joliet Municipal Airport. Chicago-Hammond is placed third on the priority list in the South Study Area because of land development pressures and the fact that there is no real alternative to this particular site. Frankfort is fourth on the list because of its potential for expansion or for replacement at another site. It also serves an unquestionably extensive general aviation market area today and is well located to serve that market in the future. Finally, Clow International is placed fifth on the South Study Area priority list primarily because of its relative lack of flexibility at its present location. Also, while land development pressures are severe, the possibility of moving the operation to a new less constrained site in the same general area is also very real.

¹Parts of this discussion have been drawn from the U.S. Department of Commerce, 1970 Census of Population: Number of Inhabitants (Illinois), August, 1971, pp 15-32, 15-33 and 15-50.

²Ibid., p. 15-14.

³ See, H.W. Lochner, Inc. for South Suburban Airport Committee, A Preliminary Analysis of a Green Garden Township Site for an International Airport Serving the Chicago Region, March 1968 and; Real Estate Research Corporation for the City of Chicago, Chicago Airport Site Selection Study, An Analysis of Some Major Considerations, March 1968.

⁴ Estimated from Division of Aeronautics data and the 1969 CATS Pilot Survey. See D. NewMyer, "Airport Usage Analysis - The 1969 CATS Survey of Pilots and Aircraft Owners", CATS Research News, March 1974, Vol. 16, No. 1, pp. 1-8.

⁵ Ibid.

⁶ FAA, Airport Traffic Activity - Fiscal Year 1973, p. 97. Figures are based on reported activity at the 364 airports with Air Traffic Control Towers.

⁷ Urban Systems Research, Batelle-Columbus, MITRE Corp., Chicago-Midway Airport Study (URS, Batelle, MITRE for FAA, 1974) 3 volumes.

⁸ Ibid., Vol. II, p. 1.

⁹ Ibid., p. 35.

PART VI. THE CHICAGO CENTRAL AREA

DESCRIPTION OF THE STUDY AREA

This study area consists of the Central Area of the city of Chicago. The boundaries selected for this area are: Division Street on the north, the Dan Ryan/Kennedy Expressway on the west, Cermak Road on the south and Lake Michigan on the east.

The Central Area of the city of Chicago is generally recognized as the centroid for economic and business activity in the Chicago-Northwestern Indiana Region. Although this role has been affected somewhat by suburban business growth in recent years, particularly in the O'Hare area, the Chicago Central Area seems to be holding its own in terms of business activity growth.

THE CURRENT AIRPORT "SYSTEM" (CHICAGO-MEIGS FIELD)

The Chicago Central Area contains only one airport facility. This facility is Merrill C. Meigs Field. It is operated by the city of Chicago and has one 3,948 foot north-south runway. Chicago-Meigs is the only other airport in the region with scheduled airline service besides Chicago-O'Hare International and Chicago-Midway. Chicago-Meigs' service consists of scheduled air taxi and intrastate airlines rather than Civil Aeronautics Board certificated air carrier service. Also, it is an important general aviation reliever airport, accommodating over 60,000 itinerant general aviation operations each year that would have to go to other airports in the region if Chicago-Meigs was not there.

Chicago-Meigs' biggest problem at the present time is the justification of its continued existence in the face of extreme criticism by environmentalists and those favoring its conversion to a lake front park. The fact that there has been a slow, but steady, decline in total activity there, between 1963 and 1973 has not made this job of justification very easy. This decline in traffic has contributed to an operations deficit, resulting in more criticism. Finally, there have been several pilot-error related accidents at, or near, Chicago-Meigs in recent years, which have added more fuel to the anti-Meigs arguments.

AN ASSESSMENT OF AIRPORT NEED IN THE CHICAGO CENTRAL AREA - CURRENT AND FORECASTED ACTIVITY

Unless city of Chicago policies change with regard to the basing of aircraft at Chicago-Meigs, the type of "need" served there will be nearly totally devoted to itinerant or out-of-area usage. Table VI-1 shows the airfield's ultimate capacity as well as forecasted FY 1984 activity. In both the 1972 and 1984 total figures, itinerant operations amount to approximately

90 percent of the total. As mentioned previously, these itinerant operations are a combination of scheduled air taxi and corporate/business activity. The table implies that, with Chicago-Meigs existing single-runway layout, there will be little problem meeting short to medium term demand. Of course, peak hour traffic, particularly in instrument conditions, may be an additional capacity problem. However, neither the specific peak hour forecasts nor a 1995 forecast are available for use. So, all that can be said is that, these are two capacity problems to be dealt with in later studies.

TABLE VI-1
Current Activity, Present Capacity and Forecast Activity
Chicago-Meigs Airport (Total Aircraft Operations)

Current (Calendar Year 1972) (itinerant-69,102)	72,360 ¹
Capacity	170,000 ²
Forecast (FY 1984) (itinerant-130,000)	146,000 ³

Sources:

- ¹ FAA Tower Count.
- ² FAA 5090-2,3 Form, National Airport System Plan Entry Criteria Worksheets, Circa 1972.
- ³ FAA, Terminal Area Forecast 1974-1984, October 1972, p. GL-6.

The operational necessity of Chicago-Meigs goes beyond the handling of air traffic demand bound for the Chicago Central Area. Chicago-Meigs' location vis-a-vis Chicago-O'Hare International and Chicago-Midway make it a primary reliever facility for aircraft that may otherwise have gone to those facilities. Chicago-O'Hare International simply can not handle any more general aviation itinerant operations. And, Midway, while it can handle additional operations, really should not take on any additional general aviation activity at the same time, it is trying to attract more airline traffic. Operationally, Chicago-Midway has its limits and, with additional airline traffic, any diversion of Chicago-Meigs traffic would be operationally incompatible. In other words, there is no real alternative to it. The next closest airports to the Chicago Central Area (besides Chicago-O'Hare International and Chicago-Midway) are a minimum of 23 miles and 27 miles away respectively.

Aside from the operational and locational necessity of Chicago-Meigs, there are other considerations in the airport need question. Downtown city of Chicago access is one very important consideration. Another is economic impact. A study performed for the City Department of Aviation identified

\$44 million in benefits¹ stemming from Chicago-Meigs operations. Finally, its scheduled air taxi or commuter airline service is beneficial in that it provides an important time-saving alternative to those travelers originating or bound for the Loop area. Of course, the scheduled service offered here, today is fairly limited in terms of points served. However, with a few regulatory changes, commuter airlines may find it easier to operate more and larger planes to more cities from Chicago-Meigs. It should be noted here that CATS' surveys show that about 80 percent of passengers on both general aviation and scheduled air taxi aircraft using this airport were on government or company business.² it is not a personal or recreational use airport by any means.

A final note with regard to airport needs in the Chicago Central Area concerns the question of ILS at Chicago-Meigs. Historically, this subject was an unpopular issue because of an early accident in which a pilot became lost and crashed into a Loop area building. However, today's air taxi, corporate and business aircraft have far more sophisticated equipment for flying in poor weather. In fact, the quality of aircraft that use Chicago-Meigs is generally quite high. Instrumentation, therefore, is looked upon as a way to keep the airport open for more days of each year and improve its safety. In addition, the economic viability of the airport would be increased, because the greater utilization would increase user fees and fuel sales revenues. Thus far, however, the city has not actively sought this improvement.

1995 REGIONAL AIRPORT SYSTEM PLAN RECOMMENDATION - CHICAGO-CENTRAL AREA

The plan recommendation for the Chicago Central Area is to retain Chicago-Meigs and add instrument landing capability to its runway from the south. It might be a very good place to install a new microwave landing system (MLS), whose signals are less sensitive to nearby structures or obstructions. It also should be pointed out that Chicago-Meigs reliability as a reliever airport will be dependent upon the installation of an ILS or MLS system. Not only will night operations be made safer, Chicago-Midway will not suffer Chicago-Meigs' diversions in poor weather. So, relief to the rest of the airport system and proposed instrument capability are two reasons why Chicago-Meigs is shown in the plan. The third reason relates to a more general concern for the future.

Many factors enter into any consideration of possible future roles for Chicago-Meigs. One important factor is the Civil Aeronautics Board's regulation of Third Level Carriers. These carriers are currently limited to aircraft of less than 30 passengers or 7,500 pounds payload (for inter-

state routes) these regulations prevent the use of higher capacity aircraft in interstate commerce. It has been reported however, that the Civil Aeronautics Board (CAB) is considering revising these regulations to permit larger aircraft.³ The new regulations would permit these carriers to operate aircraft such as that now operated by Air Illinois to cities outside Illinois therefore making their services much more attractive.

A study undertaken for NASA⁴ includes Chicago-Meigs as a key airport in a midwestern short-take off and landing air transportation system. The feasibility of increased levels of scheduled air service at Chicago-Meigs must be looked at seriously as an alternative to meeting future air travel demands. Aircraft are being designed that could provide such services to medium haul points efficiently from an airport like Chicago-Meigs. (HS-146 and DHC-7 for example). Also, future business and corporate aircraft will also have different characteristics than those presently in use. A new generation of business jets is already appearing that can operate efficiently and more quietly than current jets from Chicago-Meigs. Therefore, new technological developments will play an important role in its future as an even more viable airport facility than it is today.

IMPLEMENTATION OF CHICAGO CENTRAL AREA RECOMMENDATIONS - A PRIORITY STATEMENT

Since Chicago-Meigs is the only airport in the Chicago Central Area, it is its first and last priority. The ultimate decision to retain this facility will depend on many criteria. However, once it closes, it will be lost forever to the regional airport system, with a resultant negative impact on airport capacity. This is an airport facility decision that clearly requires very careful, and long-range consideration. The 1995 Plan recommendation is that Chicago-Meigs be retained, with instrument landing capability, throughout the 20-year plan period.

¹Department of Aviation, City of Chicago, Meigs Field Presentation, November 1973, p.9.

²Chicago Area Transportation Study, Meigs Field Survey data, October-November 1972.

³Business and Commercial Aviation, December 1973, p. 24.

⁴H.L. Solomon and S. Sokolsky (The Aerospace Corporation) for Ames Research Center-NASA, An Economic Assessment of STOL Aircraft Potential Including Terminal Area Environmental Considerations, 2 volumes, (El Segundo, California: The Aerospace Corp., July 1973).

PART VII A REGION WIDE AIRPORT SYSTEM PLAN PRIORITY STATEMENT

INTRODUCTION

The five previous chapters of this report have identified the sub-regional airport system characteristics: existing system, current/forecast activity and need; as well as the plan recommendations for the individual study areas. The purpose of this part is to summarize the recommendations at the regional level with an identification of region-wide priorities based on each study area. In this regional priority analysis, the costs of the plan are summarized at the airport level, rather than the individual project level. This was done in order to depict the overall "total" plan cost in an easily understandable fashion. Obviously, not all of the projects at each airport will be funded at once. However, the cost figures utilized in this chapter give the reader an understanding of the order of magnitude of the recommendations for each airport.¹ Also covered in this chapter is a "means of implementation" section. This section is intended to give a broad coverage of how the recommendations contained in the 1995 Airport System Plan can be brought about.

GENERAL RECOMMENDATIONS

A series of general recommendations are presented in Table VII-1. Their purpose is to identify the general areas of needed improvement in the airport system. The first two: increased public ownership of general aviation reliever airports and zoning have been discussed repeatedly throughout this report. The third recommendation stresses the need for a review process regarding the establishment of new privately owned general aviation airports (public and private use). The primary reason for this recommendation is that the general site areas for publicly owned, public-use airports shown in the 1995 Plan should be protected from airspace encroachment (land-site and air-space) by privately owned airports. The fourth recommendation stresses the need to continue to invest in existing public-owned, general aviation reliever airports. The fifth general recommendation identifies the need to proceed immediately with master planning for new airports, especially the joint Illinois-Indiana Study needed for the "Third Major Airport," while the land is available in the general site areas. The sixth and final general recommendation identifies the linkage between the air travel needs of the region and the overall intercity travel needs of the region, including rail and bus.

GENERAL PRIORITIES

In order to focus on the airport development needs of various subareas of the region, the northeastern Illinois area was divided into five "Study Areas" (see Figure I-3, page 7). The existing airport system and aviation demand in each study area were examined and any problems identified. The

TABLE VII-1
1995 Airport System Plan General Recommendations

RECOMMENDATION

1. Public ownership for key existing general aviation reliever airports.
2. Compatible land use and height restriction zoning around all existing and proposed publicly owned airports.
3. Restrictions on the award of new operating certificates to all privately owned airports, public-use or RLA, until a process can be set up to review the effect of all such facilities on the regional airport system plan recommendations.
4. Improvement of existing public owned airports as demand requires it.
5. Master planning, site selection and advance land acquisition for all new airports.
6. Consideration must be given to short haul intercity rail and bus service, as well as "STOL Airline Service" from Chicago-Meigs, as an important supplement to airline services at Chicago-O'Hare International and Chicago-Midway.

most critical problem discovered is the high degree of privately owned airports in some study areas. Several key airports in the system are privately owned. They are increasingly subject to closure resulting from the development of incompatible land uses adjacent to them. Other problems identified, include insufficient airport capacity, the lack of long runways and the poor location of facilities relative to high demand areas. In the summary to each individual study area chapter of the report, priorities for airport development which would alleviate the problems identified for that area were proposed. The concluding chapter of the report includes a ranking of each study area, as a whole, according to the perceived immediacy of the problems which affect the provision of an adequate airport system in that area. This ranking which is presented in Table VII-2 is necessary to identify where in the total region action should be taken first. As can be seen in Table VII-2, the North Study Area is identified as the first study area for consideration. The critical problems resulting from recent airport closings in this area and threatened closings of privately owned airports in the near future indicate that its problems must be considered first. The Chicago Central Area is identified as the second priority, because of the tenuous position of Chicago-Meigs. It has been shown that without runway instrumentation, its future role as an airport appears somewhat limited because of the influence of bad weather on the airport's operation. With instrumentation, weather-related capacity constraints can be eased and the airport, hopefully, can become more economically viable. The South Study Area is shown as a third priority because of threatening airport closures as well as the need for a good general aviation reliever for Chicago-Midway. The West Study Area is shown fourth

with the New Elgin Airport listed as the major near-term need for that part of the region. The Northwest Study Area is indicated last because of relatively few current problems. However, increased land use pressures on Crystal Lake could require some re-thinking of the immediacy of the situation.

TABLE VII-2
1995 Airport System Plan Study Area Rankings - General Factors

RANK	STUDY AREA	FACTORS
1.	North	<ul style="list-style-type: none"> A. Land use pressures threaten privately owned airports B. Limited airport capacity C. Key reliever airports to Chicago-O'Hare International
2.	Chicago Central	<ul style="list-style-type: none"> A. Air access to Chicago Central Area B. Important capacity relief for Chicago-Midway and Chicago-O'Hare International C. An important transportation facility for the future due to changes in aircraft technology
3.	South	<ul style="list-style-type: none"> A. Threatened airport closures B. Need for long runway, instrumented alternative to Chicago-Midway C. Return of airline service to Chicago-Midway
4.	West	<ul style="list-style-type: none"> A. Limited airport capacity due in part to recent airport closures B. Key reliever airports for Chicago-O'Hare International
5.	Northwest	<ul style="list-style-type: none"> A. No public ownership of airports in entire study area B. Some land use pressures in southeastern portion of study area

THE RANKING OF INDIVIDUAL AIRPORTS

Once the priority for airport projects within each study area have been identified and the study area ranking established, a transition must be made to the ranking of individual airport projects on a region-wide basis. In other words, the priorities within each study area must be mixed with those of other areas to establish a regional ranking of projects. This mixing of priorities reflects the ranking of study areas depicted in Table VII-2.

It should be pointed out first that funding constraints and existing airport sponsorship dictated a division of airport projects into three separate groupings. They are:

1. Public acquisition of existing privately owned general aviation airports or development of new public owned general aviation airports.
2. Continued development of existing publicly owned general aviation reliever airports.
3. Development of major air carrier airports.

Once priorities are reached within these groupings, then a further step must be taken to "mix" them together in the first five-year period development program of the 1995 Plan. In the case of air carrier airports, there is a separate allotment of money available each year from the federal government. Improvements of these airports therefore do not compete with the general aviation airports in the region for federal funding. The overall air carrier funding available for the Chicago Region will be the key factor in determining when air carrier improvements can be made.

In the case of general aviation airports, the first five-year program period will be crucial to the success of the plan. Existing publicly owned airports must not be discouraged by the expenditure of money on the acquisition of new (either all new or existing privately owned) publicly-owned airports. At the same time, a mix of projects must be reached which encourages new local sponsors to become involved in the "new airport" situations. In all cases the detailed planning work must be accomplished for each airport before capital improvements can proceed. Planning funds come from yet another "pot" of designated federal funds. Depending upon availability of funds, planning work must be accomplished quickly to outline the specifics of each airport's improvements.

All of this implies that there are many factors involved in the ranking of airport projects - planning, available funding and so forth. Since this report is directed at a "first cut" at the priority question, for a twenty year period, funding availability is not the key factor. Instead, other factors such as overall demand, the danger of airport closure, adjacent land use pressures, and so forth, must be examined for each airport just as they were for each study area.

PUBLIC ACQUISITION OF EXISTING OR CONSTRUCTION OF NEW AIRPORTS

In arriving at a priority listing for the new' all-new and acquisition of existing privately owned airports, several factors had to be considered. Table VII-3 lists the factors considered for this group of airports. They include: threatened airport closure, aircraft operations capacity, potential public sponsorship, adjacent land-use pressure, based aircraft capacity and airport master planning. In evaluating how each airport does compared to each factor, it should be noted that there was no effort made to "weight" each factor compared to another. Instead, a

TABLE VII-3

Ranking Factors - Public Acquisition of Existing Airports and Development of New Public-Owned Airports

	Airport Closure Threatened Within 5 Years?	Theoretical Airport Operations Capacity Exceeded By Mid-1980's?	Has a Potential Public Sponsor?	Adjacent Land Use Pressure Now?	Near or at Present Based Aircraft Company?	Airport Master Plan Underway ?
Campbell's	No	Possible	Possible	No	Yes	No
Chicago-Hammond	Possible	No	Possible	Possible	No	No
Chicagoland	Yes	Yes	Yes	Yes	Yes	No
Clow International	No	Possible	Yes	Yes	No	No
Crystal Lake	Possible	No	Yes	Yes	No	Yes
Frankfort	No	No	Possible	Possible	No	No
Galt	No	No	No	No	No	No
Lewis-Lockport	No	Yes	Possible	Yes	Yes	No
New Elgin*	Possible	Possible	Yes	Yes	No	Yes
New Joliet*	Yes	No	Possible	Yes	No	No
New Northwest	No	No	No	Possible	No	No
New West	No	No	No	No	No	No
Pal-Waukee	Possible	Yes	Possible	Yes	Yes	No
Schaumburg	No	Possible	Yes	Yes	Yes	Yes

87 *Comments based on an evaluation of the existing airport sites which these airports are to replace.
SOURCE: Chicago Area Transportation Study.

subjective evaluation was made as to how each airport met each factor and then the magnitude of the overall group of answers was estimated.

For example, Galt is not threatened by airport closure, does not have an operations capacity problem, does not have a potential public sponsor pushing for it, does not have any adjacent land use pressure, has room for more based aircraft and has no airport master plan underway. This tells us, without looking at the other airports in the list, that Galt should be placed near the end of the list of priority considerations. On the other end of the scale is Chicagoland Airport. It is threatened by airport closure, it does have an operations capacity problem, it does have potential local sponsorship, it is pressured by nearby land-use development, it is near its based aircraft capacity, and does not have a master plan study underway (which is the first required step for full public financing of the airport). Chicagoland's situation is critical and, therefore, it should be placed near the top of the priority list so it will receive early attention.

Table VII-4 presents the results of a specific priority ranking of new public ownership airports to be developed either as completely new sites or through public acquisition of existing privately owned facilities. The rankings reflect an evaluation of the relative importance of each airport in terms of meeting the needs of the region as a whole. Also included are brief statements of the factors influencing the ranking decision. As shown in Table VII-3 the most important projects are influenced by a combination of immediate needs and potential immediate loss of capacity through airport closure. Others reflect factors such as future increases in development pressures to the point that public ownership will become necessary to retain the airport.

It must be recognized that many things could happen which would affect these rankings. For example, if a key airport were to close before the recommended public acquisition could be accomplished, an adjacent or new existing site might move up to a higher priority.

EXISTING PUBLICLY OWNED RELIEVER AIRPORTS

A process similar to that followed for the previous group of airports was followed for this group. Table VII-5 shows the factors considered in ranking this group of existing publicly-owned airports. Table VII-6 shows a ranking of existing publicly-owned general aviation reliever airports. Chicago-Meigs and DuPage County are selected first and second, respectively, because of their key itinerant aircraft operations reliever status relative to Chicago-O'Hare International and Chicago-Midway. This role has not been demonstrated as clearly for Waukegan Memorial and Aurora Municipal, although such traffic will surely develop in the near future. Waukegan Memorial is selected third because of its important role capacity wise in the North Study Area. Aurora Municipal, while selected last, is nonetheless quite important in terms of the provision of adequate airport capacity to the West Study Area.

AIR CARRIER AIRPORT PRIORITIES

Table VII-7 reflects a detailed statement of priorities for air carrier airport development. As has been the case throughout the development of the 1995 Airport System Plan, the emphasis is on the existing air carrier airports. It has been assumed that Chicago-O'Hare International and Chicago-Midway will have to be supplemented with a much improved system of general aviation reliever airports in order to do this. In other words, any great influx of general aviation activity to either Chicago-O'Hare International or Chicago-Midway above today's levels would negate the basic assumptions of this plan and would mandate a re-ordering of airport development priorities in the region. The Third Airport site selection and acquisition recommendation, while last on the list, must be initiated within the next five years or there will be problems in finding an adequate site area at reasonable cost.

MEANS OF IMPLEMENTATION

Airport Sponsorship

The first major step in the implementation of the airport development recommendation is securing the necessary local sponsorship for the airport master plan and subsequent development. Under Illinois Law, several different levels of government are permitted to "locate, establish, and maintain" public airports.² These jurisdictional levels range from the state government itself to port authorities and park districts. Municipalities, counties, and special airport authorities are also permitted to establish public airports. An airport authority is established by a vote of the people residing within its proposed boundaries and is granted certain taxing powers for airport purposes. Such an authority may consist of one municipality, a combination of contiguous municipalities or townships, parts or all of a county or even more than one county. It is granted taxing powers up to a certain limit and the power to sell revenue bonds and general obligation bonds up to a certain limit. Municipalities and counties are also granted various taxing and bonding powers to limits set by law. Under federal regulations, any governmental jurisdiction that is permitted, by state law, to maintain and operate a public airport is considered an eligible sponsor for federal funding of airport planning or development.

Securing the necessary local sponsor for airport planning and development can present problems, especially in a highly urbanized region. Both the benefits and the costs of airport development often extend well beyond the boundaries of existing governmental units. Determining which unit is the most appropriate to undertake a master planning study and, at the same time, willing to invest the local share may be a difficult task. For example, it may be necessary to establish a public airport in an outlying county (such as McHenry County) which is intended to serve demand that is largely generated in adjacent, more densely developed counties (such as southern Lake and northern Cook Counties). The primary benefits of this airport, at least initially, may be to the communities, business, and persons in the more urbanized counties, while the immediate financial and environmental burdens fall on the outlying county or a single community within it. While persons in this outlying area will certainly receive some benefits, initially

TABLE VII-4

1995 Airport System Plan Priorities-Public Acquisition of Existing Airports
and Development of New Public Owned Airports

Rank	Airport	Study Area	Factors	ESTIMATED COSTS (1973 \$)	
				Property	Construction
1	Pal-Wauke Chicago	North	A. Must be considered jointly- together they account for 43.3 percent of capacity in North Area and 10.6 percent of Regional G.A. capacity.	\$9,753,000	\$4,146,000
2		North		4,034,000	2,047,000
			B. Land-use pressures may cause immediate closure or restrict airport operations		
			C. Both operating at or above capacity--loss of either would severely impact other.		
			D. Jointly perform key reliever role to O'Hare.		
3	Lewis-Lockport	South	A. Need for ILS capacity in South area.	7,141,000	3,169,000
			B. Relief to Midway to allow expan- sion of its air carrier role.		
			C. Land-use pressures		
			D. Should be studied jointly with New Joliet if possible (Rank 6)		
4	New Elgin	West	Demand relief for Northern portion of West Study area.	4,273,000	3,452,000
5	Crystal Lake	Northwest	Development pressures on existing privately owned airport.	1,818,000	1,091,000
6	New Joliet	South	A. Replacement for existing air- port to close in 1976.	7,206,000	1,987,000
			B. Demand relief in South Area.		

7	Campbell's	North	A. Development pressures on existing privately owned airport. B. Important existing capacity.	1,643,000	1,861,000
8	Chicago-Hammond	South	Development pressures on existing privately owned airport.	1,407,000	1,261,000
9	Schaumburg	West	A. Important capacity well located relative to demand. B. Development pressures on existing privately owned airport.	2,111,000	8,99,000
10	Frankfort	South	Potential as important, large capacity facility in this portion study area.	1,586,000	899,000
11	New Northwest	North	A. Important additional capacity to study area. B. Potential for improved ILS relief to O Hare.	3,555,000	3,716,000
12	Clow	South	A. Additional Capacity for portions of West and South Areas. B. Increasing Development Pressures.	\$2,404,000	\$1,091,000
13	Galt	Northwest	Additional capacity serving North and Northwest Study Areas - Long Term.	1,260,000	899,000
14	New West	West	Additional capacity serving West Study Area - Long Term.	3,517,000	1,968,000

TABLE VII-5

Ranking Factors - Priorities for the Development of Existing Public-Owned General Aviation Airports

	Theoretical Operations Capacity Exceeded by Mid-1980's?	Is a Key Close-In (40 miles from the Loop maximum) Reliever Airport?	Approved Layout Plan Available, or Master Planning Underway?	Air Traffic Control Tower Available?	Scheduled Service?	Near or at based Aircraft Capacity?
Aurora Municipal	Possible	No	Yes	Yes	No	No
Chicago- Meigs	Possible	Yes	Proposed	Yes	Yes	Not Applicable*
DuPage County	Yes	Yes	Yes	Yes	No	Yes
Waukegan Memorial	Possible	No	Yes	No	No	No

* This service (permanent aircraft storage) not offered at Chicago-Meigs.

SOURCE: Chicago Area Transportation Study.

Table VII-6

1995 Airport System Plan Existing Public Owned General Aviation Facilities

<u>Rank</u>	<u>Airport</u>	<u>Study Area</u>	<u>Factors</u>	<u>COSTS (1973 \$)</u>	
				<u>Property</u>	<u>Construction</u>
1	Chicago-Meigs	Central	<p>A With approximately half of the capacity of Chicago-Midway, Chicago-Meigs will be an important reliever to Chicago-Midway as the airlines return more and more flights there.</p> <p>B. Runway instrumentation needed quickly with an approved instrument approach necessary as an interim measure.</p>	0	\$ 546,000
2	DuPage County	West	<p>A. As the state's second busiest airport, continued improvements are mandatory for this airport to maintain its key reliever role.</p> <p>B. More runway and based aircraft capacity is needed immediately.</p>	\$9,588,000	5,230,000
3	Waukegan Memorial	North	<p>A. Waukegan Memorial's reliever role will always be critical in the capacity-constrained North Study Area.</p> <p>B. Runway lengthening and complete instrumentation of main runway should be accomplished as needed.</p>	6,130,000	3,486,000
4	Aurora	West	<p>A. More runway capacity is needed.</p> <p>B Capacity constraints in West Study Area will make Aurora Municipal more and more needed.</p>	7,783,000	6,458,000

Table VII-7

1995 Airport System Plan Specific Airport Priorities Air Carrier Airports

<u>Rank</u>	<u>Airport</u>	<u>Study Area</u>	<u>Factors</u>	<u>COSTS (1073 \$)</u>	
				<u>Property</u>	<u>Construction</u>
1	Chicago-O'Hare International	West	<p>A. As the world's busiest airport, satisfaction of its needs are critical to the system of airports around Chicago.</p> <p>B. Anything that can be done to improve the overall airspace or landside capacity of this facility must be done quickly.</p>	0	\$80,652,000
2	Chicago-Midway	South	<p>A. Performs key reliever role to Chicago-O'Hare International.</p> <p>B. Serves as an important base for business and corporate aircraft.</p> <p>C. Will receive additional airline flights in the near future, thus expanding its overall importance to the Region.</p>	0	10,990,000
3	Site Selection, Land Acquisition for a New Air Carrier Airport ("Third Major")	South, (and Northwest Indiana)	<p>A. Site selection and land acquisition must be performed quickly through a Bi-State study wherein Indiana and Illinois are involved from the start.</p> <p>B. If the land is not reserved soon, costs will soar and encroaching residential development will threaten possible site areas.</p>	?	0 (\$1,000,000 allotted for master planning and site selection)

they may not be in a proportion of the economic and social costs of providing a facility sufficient to serve the people of many communities and more than one county.

A similar situation may develop in a highly urbanized area that has been subdivided into numerous independent suburban municipalities. If one of these municipalities develops or acquired an airport, it may be accepting a financial burden greater than the benefits it, alone, receives. Other communities, not investing directly in the facility, may benefit equally or even greater than the community operating the airport. On the other hand, the impacts of the airport may also present jurisdictional problems. Noise from the airport may have a greater impact on a neighboring community which has no direct control over it.

These jurisdictional problems, especially in an urbanized area, may indicate the need to extend the boundaries of the body governing the airport to more closely coincide with the areas which receive both the benefits and the impacts of the facility. The establishment of an airport authority could, in some cases, meet this need. In other cases, airport ownership by a county rather than a single community may be most appropriate. Therefore, one purpose of a master planning study is to determine the most equitable solution to the local sponsorship issue. As a result, the local sponsor for the master plan may be different than the ultimate local sponsor for airport ownership and development. A study undertaken by one community may suggest that the community should join with other adjacent communities to form a municipal airport authority for construction or acquisition of a public airport to serve the area. However, where such an approach is likely to be suggested, it may be difficult to interest any one of these communities in accepting the financial obligations of sponsoring a master planning study for an airport which will benefit other communities. In these cases it may be necessary to encourage several communities to undertake the joint sponsorship of a master planning study and divide the local share. Alternatively, additional incentive to conduct the study might be provided to a single community by reducing the local cost of the study. This could be done in those cases wherein a proposed airport is of significance to the regional and state airport systems, by increasing the state's share of the master plan costs. This would help insure that a master plan is accomplished in certain crucial cases.

Airport Master Planning

The 1995 Airport System Plan recommendations for airport development generally falls into one of three categories: improvement of existing publicly owned airports, public acquisition and improvement of existing privately owned airports, or development of new publicly owned airports. Each of these categories involves public ownership of the airport facility and development on a scale that, for practical consideration, requires State and Federal Grants-in-aid. Under the Airport and Airways Development Act of 1970, federal grants are available to public airport sponsors for the acquisition and/or development of airport facilities on a local/federal matching basis.³ For most capital improvement projects, the federal share is 75 percent of the eligible project cost. Terminal or hangar buildings,

auto parking, and access roads are among the types of projects currently ineligible for federal funding. On most projects, the State of Illinois provides one-half of the local share, leaving 12.5 percent of the total project cost to the local airport sponsor.

In order to be eligible for federal funding, a project must be included on an airport layout plan approved by the FAA. An airport must also be identified by the FAA as an airport of national significance in the National Airport System Plan (NASP). Inclusion in this plan is based on federal criteria.⁴ All publicly owned airports in the 1995 Airport System Plan should meet the NASP criteria. Once these criteria are met, grants are available to local sponsors for the development of individual airport master plans under the auspices of the 1970 Act's "Planning Grant Program". The purpose of a master plan is to examine the airport facility needs of a given area and determine if existing facilities (if any) are adequate to meet these current and projected needs. In cases where they are not, a master plan then proposes appropriate expansion and improvement of existing facilities or development of a new airport. The final product of a master planning study is the airport layout plan discussed above which shows the ultimate configuration of the existing or proposed airport.

In order to implement any of the three categories of recommendations made in the 1995 Plan, airport master planning studies are necessary. In the case of public acquisition of an existing airport or the construction of a new public airport, the first phase of a master plan would include a detailed study of the feasibility of public airport ownership. In either case, where such development is shown to be feasible, alternative sites are examined to determine the best location. Where public acquisition of a private airport is proposed, it is important to determine if this course of action is, in fact, more advantageous than the development of an entirely new facility.

In addition to an airport layout plan, a master planning study can provide information on the potential environmental impact of the proposed airport development projects. This information is necessary for the completion of environmental impact statements required for federal funding of most major improvements at airports. It is also useful in providing information for the necessary public hearings on these projects.

Among other products of a master planning study is a financial plan which proposes the best of various alternative means of financing the proposed airport development. A complete master plan will also include proposals for height control and compatible land-use zoning to be implemented by the appropriate jurisdictions for the area surrounding the airport. These proposals are intended to offer the maximum protection of the public investment in the airport through prevention of airspace obstructions and prohibition of incompatible land uses in the airport vicinity.

Table VII-8 provides an estimate for the planning costs associated with the 1995 Airport System Plan recommendations. These figures are provided only as a guideline and are not intended to be imposed as limitations on relationships that might be established between potential local sponsors and

TABLE VII-8
1995 Airport System Plan Master Planning Needs and Costs

AIRPORT	STATUS	NEEDS	COST ESTIMATE
<u>Air Carrier</u>			
Chicago-O'Hare International	Underway	Complete	2,000,000
Chicago-Midway	Pending	Complete	335,000
Third Major	None	Complete	1,000,000
AC Subtotal			3,325,000
<u>Public ILS</u>			
Aurora Municipal	Finished	Approval by FAA	0
DuPage County	App. ALP *	EIS	40,000
Elgin (New)	Underway	Complete	75,000
Lewis-Lockport	None	Complete	75,000
Chicago-Meigs	App. ALP *	EIS	30,000
Northwest (New)	None	Complete	75,000
Waukegan Memorial	App. ALP *	EIS	40,000
ILS Subtotal			335,000
<u>Public VFR</u>			
Campbell's	None	Complete	50,000
Chicago-Hammond	None	Complete	50,000
Chicagoland	None	Complete	50,000
Clow International	Pending	Complete	50,000
Crystal Lake	Underway	Complete	62,014
Galt	None	Complete	50,000
Joliet (New)	None	Complete	50,000
Pal-Wauke	None	Complete	75,000
Schaumburg	1st Phase Complete	Complete	53,671
New West	None	Complete	50,000
VFR Subtotal			540,685

Overall Total = \$4,200,685

* Approved Airport Layout Plan

SOURCE: Chicago Area Transportation Study

private consulting firms. However, it can be seen that the cost involved is significant and is certainly one to be reckoned with in upgrading the Chicago area airport system.

THE FIRST STEPS TOWARD IMPLEMENTATION

It is evident that the proposals contained in the 1995 Airport System Plan are oriented primarily to the general aviation reliever airport question. This was, indeed, the intent of the effort. This does not mean that Chicago-O'Hare International and Chicago-Midway are unimportant. Instead, it identifies an interrelationship among all the public and private owned airports in the region. It also shows that, if this interrelationship is ignored from an investment standpoint much longer, and airports are allowed to close, then congestion of existing publicly owned airports will occur. These airports would be insufficient to meet the aviation demand that is present today, much less 1995 demand.

The "first steps" that must be taken toward implementation of the 1995 Airport System Plan proposals are:

1. Development of local sponsorship and begin master planning studies for (in this order):
 - a. Pal-Waukee
 - b. Chicagoland
 - c. Lewis-Lockport

These are the key privately owned airports in the present airport system and are not yet presently under consideration by potential public sponsors. The FAA, the State and all regional agencies should take an active role in the development of the local interest in support of the 1995 Plan proposals. These three airports must be studied within the next two years. In the case of Lewis-Lockport, quick study is needed not because of threatened closure, but because of the short-term availability of adjacent vacant land for future airport use. Acquisition of these three airports by the sponsoring public agencies should immediately follow, but not precede, the master planning studies.

2. Strong support for, and continued emphasis on, Chicago-Meigs and DuPage County Airports as key publicly owned airports in the system. A key part of this support must be funding of a master planning study for each within the next two years. These studies should cover the question of the operational role of each airport in view of the public opposition that has built up against these facilities.
3. Continued support of the transfer of significant airline activity from Chicago-O'Hare International to Chicago-Midway as a means of providing congestion relief to the former.

This support must come from all levels of government. The completion of a master planning study for Chicago-Midway is recommended as a means to develop more information on the issue. Also, the completion of a master planning study for Chicago-O'Hare International is mandatory in the next year so that some answers can be made available regarding its ultimate capacity and when this capacity will be reached.

CONCLUDING REMARKS - POLICY IMPLICATIONS OF THE PLAN

Inherent in the 1995 Plan recommendations are several policy implications which must be considered in the plan implementation. They are:

1. The role of public agencies in acquiring and operating airports is to be increased under the provisions of the 1995 Plan.

This development was considered to be essential in order to ensure the survival of the present key private owned airports within the regional system. If however, the present structure of federal, state and local laws change with regard to the funding of airports, this suggested role may be revised. Certainly, it should now be looked at as a long-term goal greatly dependent upon the outcome of individual airport master plan and airport feasibility studies.

2. Public support of privately owned airports was not assumed to have a major role in the plan.

Because of the Congress reluctance (to date) to approve direct financial aide to privately held airports, it had to be assumed that outright public ownership of the key parts of the airport system was the norm to be followed in the future. It was reasoned that, through public ownership, adequate land use zoning could be instituted around airports to protect the public's investment as well as to keep the airports in operation. However, if such protection could be achieved for privately owned airports, this action might, in certain cases, avoid massive public investment to "save" airports through outright acquisition.

3. The Third Airport will not be in operation by 1995, therefore this facility did not play a significant role in the determination of the configuration of the 1995 Airport System Plan.

Because of the uncertain nature of this issue due to the energy and changing demand forecasts, the development of a new major air carrier airport by 1995 was not considered critical. However, more precise studies of this issue by

the affected parties (e.g. the States of Illinois and Indiana, FAA and the city of Chicago) are recommended. These studies must examine the issue not only from the demand perspective, but also from the perspective of the impact of a new St. Louis air carrier facility, the energy question, financial feasibility and land use development policy.

4. The Magnitude of local, state and federal funding of general aviation airports in the Chicago Region will have to be increased over present levels if the 1995 Airport System Plan is to be implemented.

Unpublished CATS research has indicated that the historical proportion of public funding invested in downstate Illinois general aviation airports is far ahead of Chicago Region general aviation airports. This ratio of funding will have to be revised in order to implement the 1995 Airport System Plan. This is particularly true over the next five to ten years, because it is in this period that many of the high value airport land acquisition questions have to be decided.

¹ For a more definitive examination of cost estimates for the plan, see J. Glassman, D. NewMyer, B. Seibert, Cost Estimates for 1995 Chicago-Gary Recommended Airport System Plan Alternative, C.A.T.S., October 1974, Unpublished Report (available in CATS Library).

² See Laws Pertaining to Aeronautics, issued by State of Illinois, Department of Aeronautics, 1972.

³ This act expires on June 30, 1975. Various proposals for its renewal or replacement have been made and are under consideration by Congress. It is anticipated that federal grants will continue in one form or another, perhaps with greater state involvement in the administration of the grants.

⁴ U.S. Department of Transportation, FAA, Order 5090.3, Change 1.

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GLOSSARY OF AVIATION TERMS

1. Air Carrier Airports - The predominant role of these airports is to serve the CAB Certificated air carriers (Local Service, Domestic Truck, and International). The intrastate Air Carriers, Third-Level Air Carriers (scheduled air-taxis), and General Aviation is accommodated to the maximum extent feasible and consistent with this dominant role.

No specific development characteristics are proposed for this category. The physical facilities required at these airports are determined by the type of aircraft operated or proposed to be operated from the airport and the level of demand (as determined in master planning studies). Conformance with federal standards, to the maximum extent feasible, is assumed.

2. ALP - Airport Layout Plan - A document which graphically describes the ultimate physical development of an airport. These documents are required of all airports which wish to receive federal airport development funds.
3. Approach ratio - the height restriction placed on man-made objects within the approach to an airport's runways. A standard ratio is 20:1, or at a distance of 20 feet from the end of the runway a structure no taller than 1 foot above the elevation of the end of the runway can be built (or allowed to grow).
4. Approach surface - a surface longitudinally centered on the extended runway centerline and continuing outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end. For example: The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of, in this case, 1,250 feet for that end of a utility runway with only visual approaches.
(Primary Surface - a surface longitudinally centered on a runway. When runway is hard surfaced, the primary surface extends 200 feet beyond each end of that runway; when runway has no hard surface, the primary surface ends at each end of that runway. The width of primary surface of a runway is determined by the most precise approach existing or planned for either end of that runway).
5. ATR - Air Transport Ratings - This is the pilot rating classification which represents those pilots with the highest level of technical competence (as judged by the FAA). Normally, ATR-rated pilots fly for the airlines or as pilots-in command of business and

corporate aircraft. There is also a large contingent of ATR pilots who serve as full-time flight instructors at many airports in the Chicago Region.

6. Based Aircraft - Aircraft which are stored, hangared, or tied-down at one particular airport, and use this airport as their primary base of operations.
7. Basic Utility - Basic utility airports have the shortest runway which the FAA considers adequate for safe land and take off of light aircraft. This airport type is divided into two sizes:

 Stage I: The minimum runway is 2,200 feet, and accommodates 75 percent of propeller aircraft of less than 12,500 pounds under the "basic conditions" of sea level elevation and 50 degrees Fahrenheit.

 Stage II: The minimum runway is 2,700 feet, and accommodates 95 percent of propeller aircraft of less than 12,500 pounds under "basic conditions".
8. Basic Transport Airport - Airports accommodating all general aviation aircraft up to 60,000 pounds including propeller transports and business or executive jets.
9. Corporate Aircraft - Term usually referred to, to describe the aircraft used for the transportation of corporate executives and of general corporate needs. Often related to turboprop aircraft and turbo-fan/jet aircraft.
10. Crosswind runways - Runways constructed to allow an airport to be used when the wind is blowing perpendicular to the "main" runway. Usually the main runway is oriented in the direction from which the wind most commonly blows. A crosswind runway is built in the next most common wind direction at the airport site.
11. Displaced Threshold - An area measured from the end of a runway that is designated not to be used for landings due to inadequate obstacle clearance on approach or inadequate runway surface to handle the impact of landings. The area can be used to begin a take-off roll or complete a landing roll.
12. DME - Distance Measuring Equipment - A piece of equipment which has both on-aircraft, and on-the-ground components. The on-aircraft component is a receiver which translates a signal from the on-the-ground component, into the distance that the aircraft is from the ground component. This equipment is used as part of aerial navigation, particularly on instrument landing system (ILS) approaches to airports. Basically, it tells the pilot how far he is from the end of a runway or from a particular navigational aid location.
13. FAA - Federal Aviation Administration - The 50,000 man (plus) federal

agency responsible for maintaining the nation's airport and airways systems. In the Chicago Region they operate out of the Great Lakes Region Office in Des Plaines.

14. FBO - Fixed Base Operator - The FBO on a public-use airport is in business to provide the basic aviation services such as fueling aircraft, pilot instruction, aircraft rental, air charter (fly-for-hire) and aircraft storage/maintenance. There can be more than one FBO on an airport. Also, on many privately-owned airports, the FBO is the owner of the airport.
15. "Floor Elevation" of TCA - altitude at which positive air traffic control in a Terminal Control Area begins. Aircraft can operate below floor elevation without being under Terminal Control Area restrictions. (See definition of Terminal Control Area).
16. General Aviation - All civil aircraft and aviation activity except that performed by the certified air carriers.
17. Glide Slope or Glide Slope Indicator - Instrument that indicates the path of descent and gives positive vertical reference to a glide path in an instrument approach to a runway.
18. General Utility Airport - This type of airport accommodates substantially all propeller aircraft of less than 12,500 pounds. It is primarily intended to serve either communities located on the fringe of a metropolitan area or a relatively larger population community remote from a metropolitan area.
19. General Transport type airport - Airport designed to accommodate transport category aircraft up to 175,000 pounds.
20. Instrument Approach - a landing approach to a runway, usually under bad weather conditions, wherein the approach to an airport's runway is flown primarily by reference to instruments to a prescribed "decision height". At this height the pilot makes positive visual reference to the airport, or its approach lights, or terminates the approach and begins climbing back to a higher altitude (missed approach).
21. IFR - Instrument Flight Rules - rules as prescribed by Federal Air Regulations for flying by instruments. Often used when weather conditions, visibility or ceiling, fall below those prescribed for Visual Flight Rules. Cannot operate IFR if weather conditions are worse than the minimums.
22. ILS - Instrument Landing System - A nonvisual, precision approach to a runway utilizing two pieces of equipment on the airport: one to provide lateral guidance to the runway centerline; the other to give positive vertical reference to the glide path to the runway end.

23. Itinerant Operation - Any operation that has a take-off to landing time span of greater than thirty minutes that does not have the characteristics of a local flight (see below).
24. Localizer Component of ILS - nonprecision instrument approach to increase utilization of an airport. This component gives the pilot-in-command lateral guidance in an approach to a runway.
25. Local Flight Operations - Refers to those activities by aircraft which;
(1) Operate in the local traffic pattern or within sight of the airport; (2), Execute simulated instrument approaches or low passes at the airport (i.e., touch-and-go's); (3) Arrive from or depart to a local practice area located within a 20-mile radius of the airport. (Most instructional/training operations are local).
26. Airport Master Plan - A document which presents (in conjunction with an airport layout plan), the ultimate configuration and development of a specific airport in both graphic and written form. This document is normally the result of one or two years of study accomplished through the airport's local government sponsor. The funding of such studies in Illinois comes primarily from the Federal Aviation Administration, with the State of Illinois and the local sponsor each paying up to one-sixth of the cost of the study.
27. MLS - Microwave Landing System - A new instrument land system using UHF radio signals to guide the aircraft's approach instead of the VHF system now used. The microwave system provides fewer ground reflections, takes up less space, and costs less to install. There are advantages to an MLS installation at "difficult" sites because of a somewhat lower cost due to less site preparation.
28. NASP - National Airport System Plan - This plan, developed by the FAA, is a legislated requirement from the 1970 Airport and Airways Development Act (PL 91-258). It replaces the old NAP or National Airport Plan. The present NASP covers nationwide airport development needs from FY 1972 to FY 1992.
29. Noise Abatement - The attempt to reduce the amount and level of noise on and around airports, especially during takeoffs and landings, partly through special operational restrictions and proper land use planning for areas affected by airport noise.
30. "Oil and Chip" Runway Surfaces - A basic type of hard surface runway, this surface is a minimum step above a regular dirt or turf runway. The advantage is that, with the addition of oil and aggregate to the natural surface, some stability is added during rainy weather.
31. Pilot Starts - An aviation industry term referring to the number of new student pilots entering pilot training or flight school programs. This is an indicator of the health of the general aviation industry.

32. PANCAP - Practical Annual Capacity - The theoretical number of aircraft operations that can be handled by an airport in a year. This measurement depends upon runway layout (number, type, direction), instrument land capability of the airport, average weather conditions, the presence of an air traffic control tower, et cetera.
33. Privately-Owned, Public-Use Airports - These airports are the existing privately-owned, public-use airports for which no public acquisition is envisioned. Their continued existence and degree of development will depend on the owner, land use/development pressures, the proximity of public-owned airports (if any) and any applicable aeronautic/airport statutes or regulations. As a minimum, the owners of these facilities are urged to maintain these airports, to the maximum extent feasible, in accordance with federal standards for Basic Utility, State II airports.
34. Publicly-Owned, Instrument Landing System Airports (Public ILS) - These airport facilities serve as the primary, all-weather, general aviation reliever airports for the region's Airport Carrier Airports. Their dominant role is to provide reasonable access to each area of the region by the complete range of general aviation aircraft (including corporate jets). Their facilities are also adequate to accommodate Third Level Air Carrier service where demand warrants.
35. Publicly-Owned, Visual Flight Rules Airports (Public VFR) - The primary role of the Public VFR airports is to supplement the Public ILS facilities in serving the general aviation needs of the region. These facilities are necessary to accommodate demand for airport facilities exceeding that which can be reasonably handled at the Public ILS airports. They are large enough to accommodate the majority of the general aviation fleet with the exception of most corporate jets. Some of the Public VFR airports may be oriented largely to personal business and recreational use. Others, dependent on local demand, may serve a high proportion of itinerant traffic. While these facilities are intended primarily as Visual Flight Rules airports, nonprecision instrument approaches may be established to increase their utilization where feasible.
36. Published Instrument Approach - All nonprecision and precision approaches to be performed at any airport in the country under instrument conditions have to be approved by the Federal Aviation Administration. Once approved, an approach "chart" or "plate" is published which graphically describes the type of approach, approach minimums, obstructions in the path to the airport, altitude data, et cetera.
37. Reliever Airport - an airport whose PRIMARY purpose is to serve general aviation AND, at the same time, relieve congestion at a major airport having a high density of scheduled certificated airline traffic. It performs this function by attracting and diverting

general aviation activity away from the major airport.

38. RLA - Restricted Landing Area - A private-use airfield with no FBO provided commercial aviation services legally available. This is a growing segment of the overall airport facilities inventory in the Chicago Region. This growth in RLA's is presumably occurring because commercial airport services are on the decline.
39. RNAV - Area Navigation - A means of navigation allowing direct flight between two points, rather than following the sometimes circuitous enroute airways. This form of navigation is usually used in the enroute (inter-city) airspace structure, although there have been some applications in metropolitan areas and at individual airports. For example, Aurora Municipal has an "RNAV" instrument approach to its main runway.
40. STOL - Short Take off and Landing - Refers to aircraft which are capable of STOL performance and airports designed to handle these aircraft.
41. T-Hangars - Storage hangars for aircraft that are T-shaped, like an airplane and grouped in multiunits on a part of an airport. One airplane per T-hangar.
(Wings form top of the T, fuselage and tail forms the stem. Aircraft is backed into hangar).
42. TCA - Terminal Control Area - The aircraft traffic control area surrounding a major air carrier airport in which all aircraft must be under radar control. Chicago TCA is this controlled area surrounding Chicago-O'Hare International and Chicago-Midway airports.
43. Turbojet - An engine that derives power from a vaned wheel spinning in reaction to burning gases escaping from a combustion chamber. The turbine in turn drives a compressor and other accessories.
44. Turboprop - A turbine engine in which the rotating turbine turns a propeller.
45. VFR - Visual Flight Rules - "Seen and be seen" flight rules. Used during good weather conditions under which an aircraft can be operated by visual reference to the ground and to other aircraft.
46. VOR - Very High Frequency Omnidirectional Radio Range - A ground radio station that provides a pilot of a properly equipped aircraft with his location in reference to that station. Better known as "Omni".
47. VOR Approach - A landing approach to a runway using the VOR as a reference point and directional guidance to the runway.

APPENDIX

AIRPORT CATEGORY DESCRIPTIONS

The airports included in the 1995 Airport System Plan are divided into five categories. These categories are: 1) Air Carrier; 2) Publicly Owned. ILS; 3) Publicly-Owned. VFR; 4) Privately Owned. Public-Use; and 5) Military. One additional category of airport facility that is not included on the plan map, but is discussed in the text is RLA s.

This Appendix describes the characteristics that have been assumed for each of these airport categories as ultimately developed. The general aviation category names emphasize the ownership and instrument landing facilities of the airports instead of physical size characteristics. Certain physical characteristics based on FAA standards are, however, proposed for these categories and are described below. These development standards are proposed as ideal standards. Conditions at specific sites may require modification of certain standards.

1. Air Carrier Airports

The predominant role of these airports is to serve the CAB certificated air carriers (Local Service, Domestic Truck, and International), the intra-state air carriers, and third-level air carriers (scheduled air-taxis). General Aviation is accommodated to the maximum extent feasible and consistent with this dominant role.

No specific development characteristics are proposed for this category. The physical facilities required at these airports are determined by the type of aircraft operated or proposed to be operated from the airport and the level of demand (as determined in master planning studies). Conformance with federal standards, to the maximum extent feasible, is assumed. It is proposed that the appropriate local authorities adopt compatible land-use and height control zoning in order to protect the public investment in these facilities and the general welfare of the surrounding community.

2. Publicly Owned, ILS Airports (Public ILS)

These airport facilities serve as the primary, all-weather, general aviation reliever airports for the region's Air Carrier Airports. Their dominant role is to provide reasonable access to each area of the region by the complete range of general aviation aircraft (including corporate jets). Their facilities are also adequate to accommodate Third Level Air Carrier service where demand warrants.

The minimum runway length standards proposed for this category of airport are derived from federal standards for a basic transport category airport designed to accommodate 100 percent of the general aviation turbine

fleet at 60 percent useful load.¹ For purposes of deriving these runway lengths, a normal maximum temperature of 85 degrees Fahrenheit and an average airport elevation of 695 feet mean sea level were used.

The proposed primary characteristics for the Public ILS airports are as follows:

1. Primary hard surfaced runway at least 5,400 feet long;
2. Hard surfaced, crosswing runway 4,300 feet long (Based on 80 percent of the primary runway length, may vary with runway orientation dependent on local wind conditions);
3. Full parallel taxiways (paved) to both runways;
4. Complete ILS (or MLS) on the Primary runway;
5. Complete runway and taxiway lighting, visual approach lighting (including Visual Approach Slope Indicators), and beacon;

And, as demand warrants:

6. Air traffic control tower;
7. Additional runway parallel to primary runway (Length dependent on nature of demand)

It is assumed that, to the maximum extent feasible, development of these airport facilities will be consistent with federal standards for Basic Transport Airports. Further, It is recommended that appropriate local authorities adopt height control and compatible land-use zoning in the vicinity of these airports.

3 Publicly Owned, Visual Flight Rules Airports (Public VFR)

The primary role of the Public VFR airports is to supplement the Public IFR facilities in serving the general aviation needs of the region. These facilities are necessary to accommodate demand for airport facilities exceeding that which can be reasonably handled at the Public IFR airports. They are large enough to accommodate the majority of the general aviation fleet with the exception of most corporate jets. Some of the Public VFR airports may be oriented largely to personal business and recreational use. Others, dependent on local demand, may serve a high proportion of itinerant traffic. While these facilities are intended primarily as VFR airports, nonprecision instrument approaches may be established to increase their utilization where feasible.

The minimum runway length standards proposed for this category of airports are derived from federal standards for a General Utility category airport. As with Public ILS airports, a normal maximum temperature of 85 degrees Fahrenheit and an average elevation of 695 feet mean sea level were used in deriving the minimum runway length.

The proposed primary characteristics for the Public VFR airports are as follows:

1. Primary hard-surfaced runway at least 3,800 feet long but less than 5,400 feet long;

2. Crosswind runway (not necessarily paved) 3,000 feet long (Based on 80 percent of the primary runway length, may vary with runway orientation dependent on local wind conditions);
3. Full parallel taxiway (paved) to primary runway;
4. Complete runway and taxiway lighting on primary runway, airport beacon, and Visual Approach Slope Indicators on primary runway;

And, as demand warrants:

5. Air traffic control tower;
6. Additional runway parallel to primary runway (Length dependent on nature of demand).

It is assumed that, to the maximum extent feasible, development of these airport facilities will be consistent with federal standards for General Utility airports.² Further, it is recommended that the appropriate local authorities adopt height control and compatible land-use zoning in the vicinity of these airports.

4. Privately Owned, Public Use Airports

These airports are the existing privately owned, public-use airports for which no public acquisition is envisioned. Their continued existence and degree of development will depend on the owner, land use/development pressures, the proximity of publicly owned airports (if any) and any applicable aeronautic/airport statutes or regulations. As a minimum, the owners of these facilities are urged to maintain these airports, to the maximum extent feasible, in accordance with federal standards for Basic Utility, Stage II airports. The continued existence of these privately owned airports can not be guaranteed to 1995. Therefore, they are deemed desirable, but not totally essential portions of the overall airport system.

5. Military Airports

The Military Airports included in these plans are the existing military use airports (and the joint civil/military use of Chicago-O'Hare International). No additional military airports or Civil/Military Joint Use agreements are envisioned in these plans.

¹FAA, Airport Design Standards-General Aviation Airports-Basic and General Transport, AC 150/5300-6, July 14, 1969.

²FAA, Utility Airports: Air Access to National Transportation, AC-150/5300-4A, Nov. 1968.



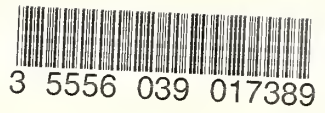
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